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THE

VOYAGE OF H.M.S. CHALLENGER.

ZOOLOGY—VOL. XVIII.

PLATES.

REPORT

ON THE

SCIENTIFIC RESULTS

OF THE

VOYAGE OF H.M.S. CHALLENGER

DURING THE YEARS 1873-76

UNDER THE COMMAND OF

CAPTAIN GEORGE S. NARES, R.N., F.R.S.

AND THE LATE

CAPTAIN FRANK TOURLE THOMSON, R.N.

142594

PREPARED UNDER THE SUPERINTENDENCE OF

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AND NOW OF

JOHN MURRAY

ONE OF THE NATURALISTS OF THE EXPEDITION

ZOOLOGY—VOL. XVIII.

PLATES

Published by Order of Her Majesty's Government

CCK 29

PRINTED FOR HER MAJESTY'S STATIONERY OFFICE

AND SOLD BY

LONDON:—EYRE & SPOTTISWOODE, EAST HARDING STREET, FETTER LANE

EDINBURGH:—ADAM & CHARLES BLACK

DUBLIN:—HODGES, FIGGIS, & CO.

1887

Price (in Two Parts, with a Volume of Plates) £5, 10s.

PRINTED BY NEILL AND COMPANY, EDINBURGH,
FOR HER MAJESTY'S STATIONERY OFFICE.

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By ERNST HAECKEL, M.D., Ph.D., Professor of Zoology in the University of Jena.

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PLATE 1.

Legion SPUMELLARIA.

Order COLLOIDEA.

Family THALASSICOLLIDA.

PLATE 1.

THALASSICOLLIDA.

Fig. 1. *Actissa princeps*, n. sp., ... × 300 — Diam. — Page 13

The entire living Spumellarium. *c*, The spherical central capsule containing finely granulated protoplasm, which is radially striated in the cortical zone; *v*, spherical vacuoles enclosed by the protoplasm; *n*, the spherical nucleus in the centre; *l*, the concentric nucleolus; *f*, the radial pseudopodia which pierce the calymma or the (yellowish) jelly-envelope of the central capsule and arise from the granular sarcomatrix.

Fig. 1*a*. Half of the central capsule of another specimen, in which the original central nucleus is cleft into numerous small nuclei, ... × 400

Fig. 1*b*. Half of the central capsule of another specimen, filled up by flagellate spores, . × 400

Fig. 1c. Eight isolated flagellate spores. . . . . × 800

Fig. 2. *Thalassolampe maxima*, n. sp., ... × 8 — 17

The entire living Spumellarium. *c*, The big spherical central capsule; *a*, the large alveoles filling the central capsule and surrounding a central nucleus; *f*, the pseudopodia piercing the extracapsular calymma.

Fig. 2*a*. The nucleus alone, with numerous nucleoli, ... × 30

Fig. 3. *Thalassopila cladococcus*, n. sp., ... × 20 — 17

c. The big central capsule; *a*, numerous large alveoles contained in the central capsule; *k*, oil globules, many of which are placed in the radially striped cortical zone; the nucleus placed centrally, is covered with numerous radial apophyses or cæcal sacs. *f*, The radially striped calymma.

Fig. 4. *Thalassicolla maculata*, n. sp., ... × 100 — 21

c. The central capsule; *v*, vacuoles filling this capsule; *n*, the central nucleus; *l*, the concentric nucleolus; *g*, the voluminous calymma, a small radial piece of which is only represented; *a*, the large alveoles; *b*, peculiar exoplasmatic bodies; *p*, black pigment in the inner zone; *f*, the retracted pseudopodia in the outer zone.

Fig. 4*a*. An exoplasmatic body, ... × 300

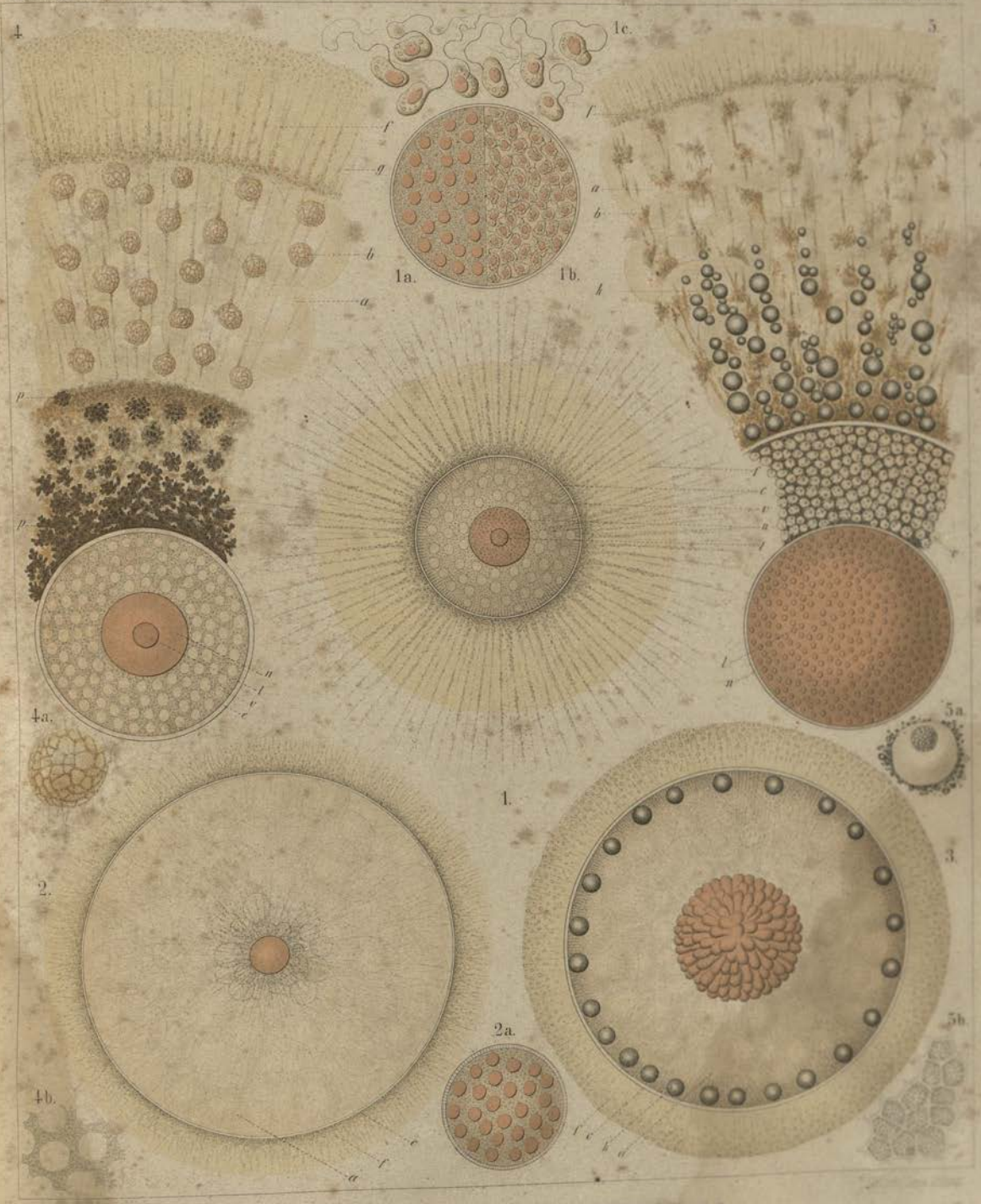
Fig. 4*b*. Vacuoles in the endoplasm, ... × 300

Fig. 5. *Thalassicolla melacapsa*, n. sp., ... × 300 — 21

n, The large nucleus; *l*, numerous small nucleoli inside the nucleus; *v*, the vacuoles filling up the central capsule and separated by black pigment; *a*, large alveoles in the calymma; *k*, oil globules; *b*, exoplasmatic bodies; *f*, the retracted pseudopodia in the outer zone of the calymma.

Fig. 5*a*. An endoplasmatic vacuole, resembling a cell, ... × 600

Fig. 5*b*. A piece of the central capsule, ... × 600



1. ACTISSA. 2. THALASSOLAMPE. 3. THALASSOPILA.
4. 5. THALASSOCOLLA.

PLATE 2.

Legion SPUMELLARIA.

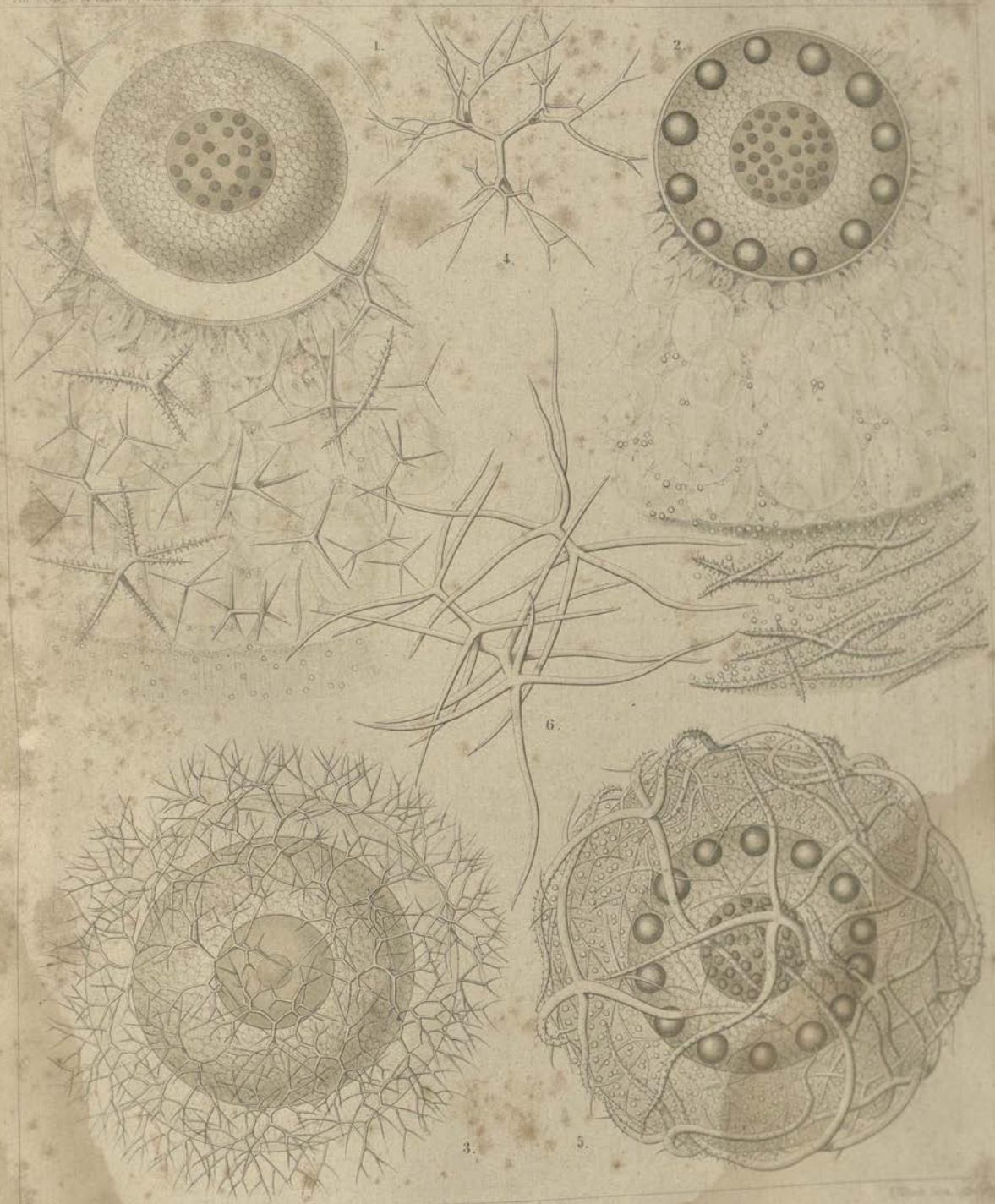
Order BELOIDEA.

Family THALASSOSPHÆRIDA.

PLATE 2.

THALASSOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Lampoxanthium pandora*, n. sp., ...	× 120	38
	The central capsule exhibits distinct pore-canals in its membrane, and a clear interval between this and the coagulated and vacuolated protoplasm. The central nucleus contains numerous dark nucleoli. The spicula are scattered throughout the alveolate calymma.		
Fig. 2.	*Thalassoplancta brevispicula*, n. sp. (vel *Lampoxanthium brevispiculum*), ...	× 120	36
	The central capsule contains numerous clear vacuoles, and in the cortical zone a layer of large oil-globules. The central nucleus includes numerous dark nucleoli. The calymma is alveolate. The spicula lie only in the cortical zone.		
Fig. 3.	*Thalassoxanthium cervicorne*, n. sp., ...	× 300	33
	The central capsule is filled up by clear vacuoles and contains a large central nucleus, with a single nucleolus. The spicula surround the thin calymma.		
Fig. 4.	*Thalassoxanthium cervicorne*, n. sp., ...	× 600	33
	A single spiculum.		
Fig. 5.	*Thalassoxanthium medusinum*, n. sp., ...	× 120	32
	The central capsule is filled up by clear vacuoles and contains on its cortical zone a layer of large oil-globules. The central nucleus contains numerous dark nucleoli. The calymma is radially striped, contains numerous small xanthellæ, and is surrounded by the spicula.		
Fig. 6.	*Thalassoxanthium octoceras*, n. sp., ...	× 400	34
	Three isolated spicula.		



LAMPOXANTHIUM.

PLATE 3.

Legion SPUMELLARIA.

Order COLLOIDEA.

Family Collozoida.

PLATE 3.

COLLOZOIDA.

		Diam.	Page
Fig. 1.	*Collozoum serpentinum*, n. sp. (vel *Collophidium serpentinum*, Hkl.), . .	× 10	26

A living cœnobium, with expanded pseudopodia. The spherical calymma (or the common jelly-mass of the colony) is alveolate and contains numerous cylindrical, serpentine, central capsules. Numerous yellow cells or xanthellæ are scattered between the radial pseudopodia in the periphery.

Fig. 2.	*Collozoum serpentinum*, n. sp., ...	× 50	26

An isolated, cylindrical, worm-shaped, central capsule, with an axial series of oil-globules; the red points are nuclei.

Fig. 3.	*Collozoum serpentinum*, n. sp., ...	× 150	26

An isolated, cylindrical, serpentine, central capsule. *k*, Oil-globules forming an axial series; *n*, densely placed, red-coloured nuclei; *c*, the capsule membrane under which are scattered small black pigment spots in the colourless cortical zone of the endoplasm; *a*, extracapsular alveoles; *x*, xanthellæ or "yellow cells."

Fig. 4.	*Collozoum amœboides*, n. sp., ...	× 100	28

A spherical cœnobium or jelly-colony. Each amœboid central capsule contains an oil-globule; the small red points are nuclei.

Fig. 5.	*Collozoum amœboides*, n. sp., ...	× 400	28

c, A single isolated central capsule; *n*, nuclei; *k*, oil-globule.

Fig. 6.	*Collozoum vermiforme*, n. sp., ...	× 30	27

g, A spherical cœnobium or jelly-colony; *a*, large alveoles, forming a cortical zone; *c*, central capsules; *k*, oil-globules.

Fig. 7.	*Collozoum vermiforme*, n. sp., ...	× 100	27

c, A single isolated central capsule; *x*, xanthellæ surrounding this central capsule; *k*, oil-globules; *n*, nuclei.

Fig. 8.	*Collozoum ellipsoides*, n. sp., ...	× 2	26

A spherical colony; the red points are central capsules.

Fig. 9.	*Collozoum ellipsoides*, n. sp., ...	× 150	26

c, A single isolated central capsule; *k*, oil-globules; *n*, nuclei.

Fig. 10.	*Collozoum inerme*, Hkl., ...	× 2	25

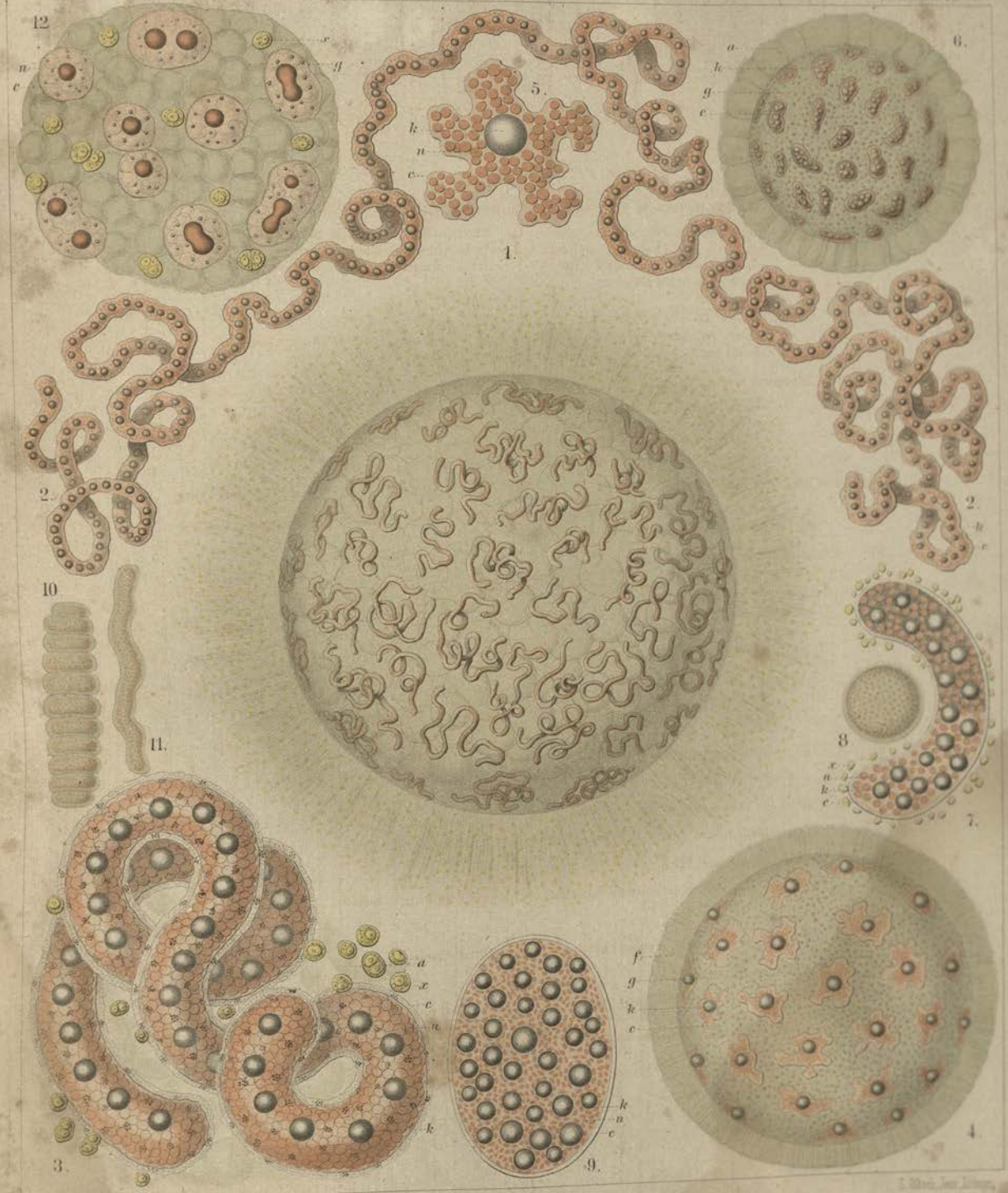
An old, cylindrical, articulated cœnobium; the red points are central capsules.

Fig. 11.	*Collozoum inerme*, Hkl., ...	× 2	25

A young cylindrical cœnobium; the red points are central capsules.

Fig. 12.	*Collozoum inerme*, Hkl., ...	× 400	25

A piece of a young colony with eight small central capsules, without oil-globules. *n*, The central nucleus in different stages of division. Two capsules are also dividing. *x*, Xanthellæ in the jelly-like calymma (blue), which also contains numerous vacuoles.



COLLOZOUM.

PLATE 4.

Legion SPUMELLARIA.

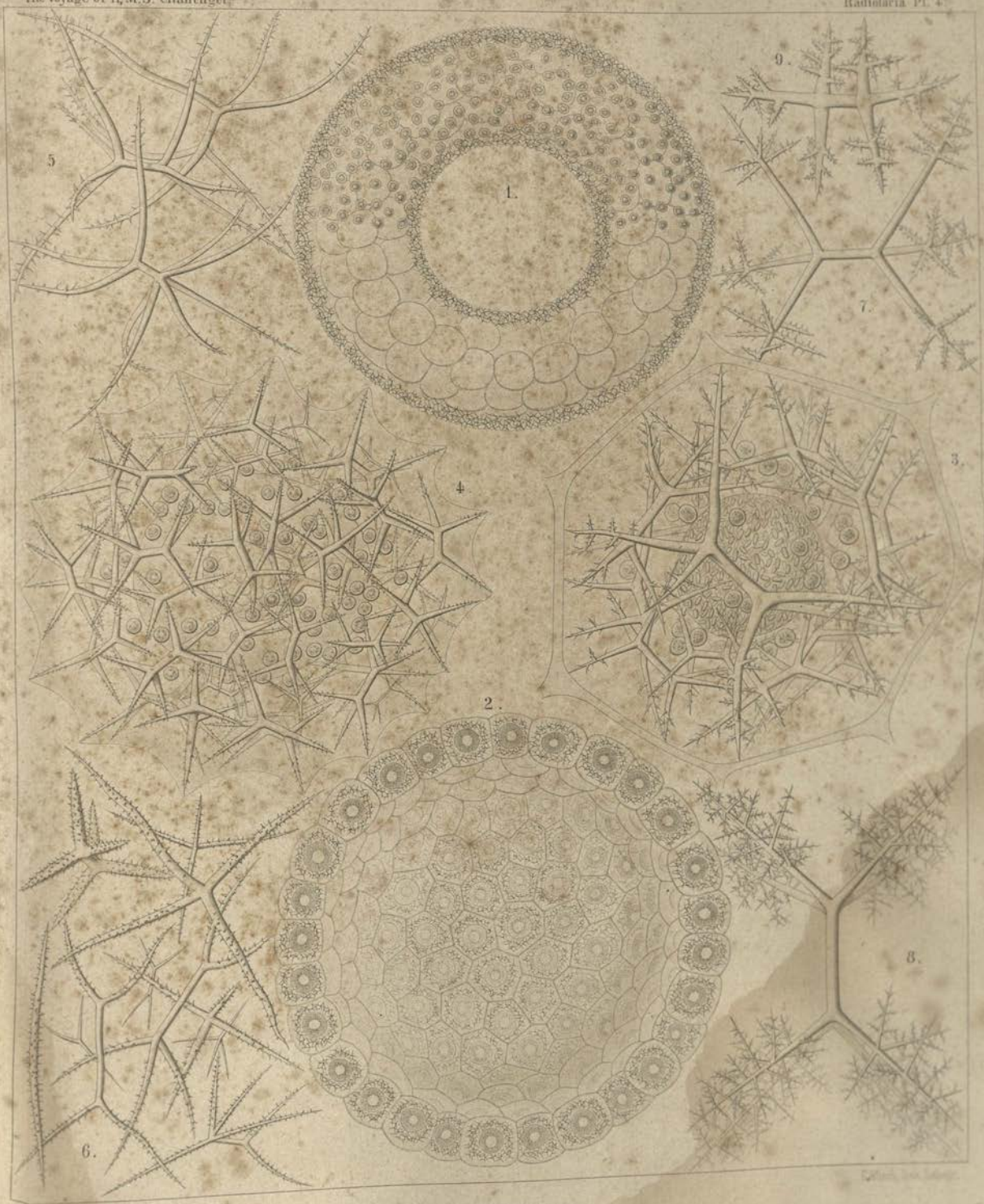
Order LARCOIDEA.

Family THOLONIDA.

PLATE 4.

SPHÆROZOIDA.

	Diam.	Page
Fig. 1. *Sphærozoum trigeminum*, n. sp.,	× 50	43
An annular colony. The main mass of the jelly-colony is filled up by large alveoles; the entire surface is densely covered with spicula, and beyond this skeleton-cover lie the spherical central capsules, each with an oil-globule. This species is by mistake not mentioned in the text.		
Fig. 2. *Sphærozoum alveolatum*, n. sp.,	× 50	43
Section through a spherical colony; displaying the inside of a hemisphere. All the central capsules lie in a single stratum on the surface of the jelly-sphere, each being surrounded by a thick-walled alveole. The spicula lie between the alveole and the capsule, which includes a central oil-globule.		
Fig. 3. *Sphærozoum alveolatum*, n. sp.,	× 400	43
A single central capsule, filled up by crystal-spores. Numerous geminato-radiate spicula and spherical xanthellæ lie between the capsule and the including thick-walled alveole. In the jelly-calymma, between the capsule and the alveole, numerous thin ramified pseudopodia are expanded.		
Fig. 4. *Sphærozoum geminatum*, n. sp.,	× 400	45
A single central capsule, with a central oil-globule, surrounded by numerous spicula and spherical xanthellæ. The jelly-substance of the calymma is expanded between the points of the spicula.		
Fig. 5. *Sphærozoum variabile*, n. sp.,	× 300	45
Three isolated spicula.		
Fig. 6. *Sphærozoum pandora*, n. sp. (vel *Rhaphidozoum pandora*),	× 300	49
A group of various spicula.		
Fig. 7. *Sphærozoum verticillatum*, n. sp.,	× 300	44
A single spiculum.		
Fig. 8. *Sphærozoum arborescens*, n. sp.,	× 300	44
A single spiculum.		
Fig. 9. *Sphærozoum armatum*, n. sp.,	× 300	43
A single spiculum.		



SPHAEROZOUM.

PLATE 5.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

Family COLLOSPHÆRIDA.

PLATE 5.

COLLOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Trypanosphæra transformata*, n. sp.,	× 150	111

A living colony. The centre of the spherical cœnobium contains a large alveole, surrounded by a net of sarcode. The entire calymma is filled up by smaller, thin-walled alveoles. Its inner part contains numerous small, young, central capsules (each with an oil-globule) without shells; in the cortical zone of the calymma lie larger capsules, each of which is enclosed by a fenestrated shell with from two to four or more dentated tubes. Between the radiant pseudopodia very numerous small yellow cells (xanthellæ), which are scattered everywhere.

Fig. 2.	*Trypanosphæra transformata*, n. sp.,	× 300	111

A single shell.

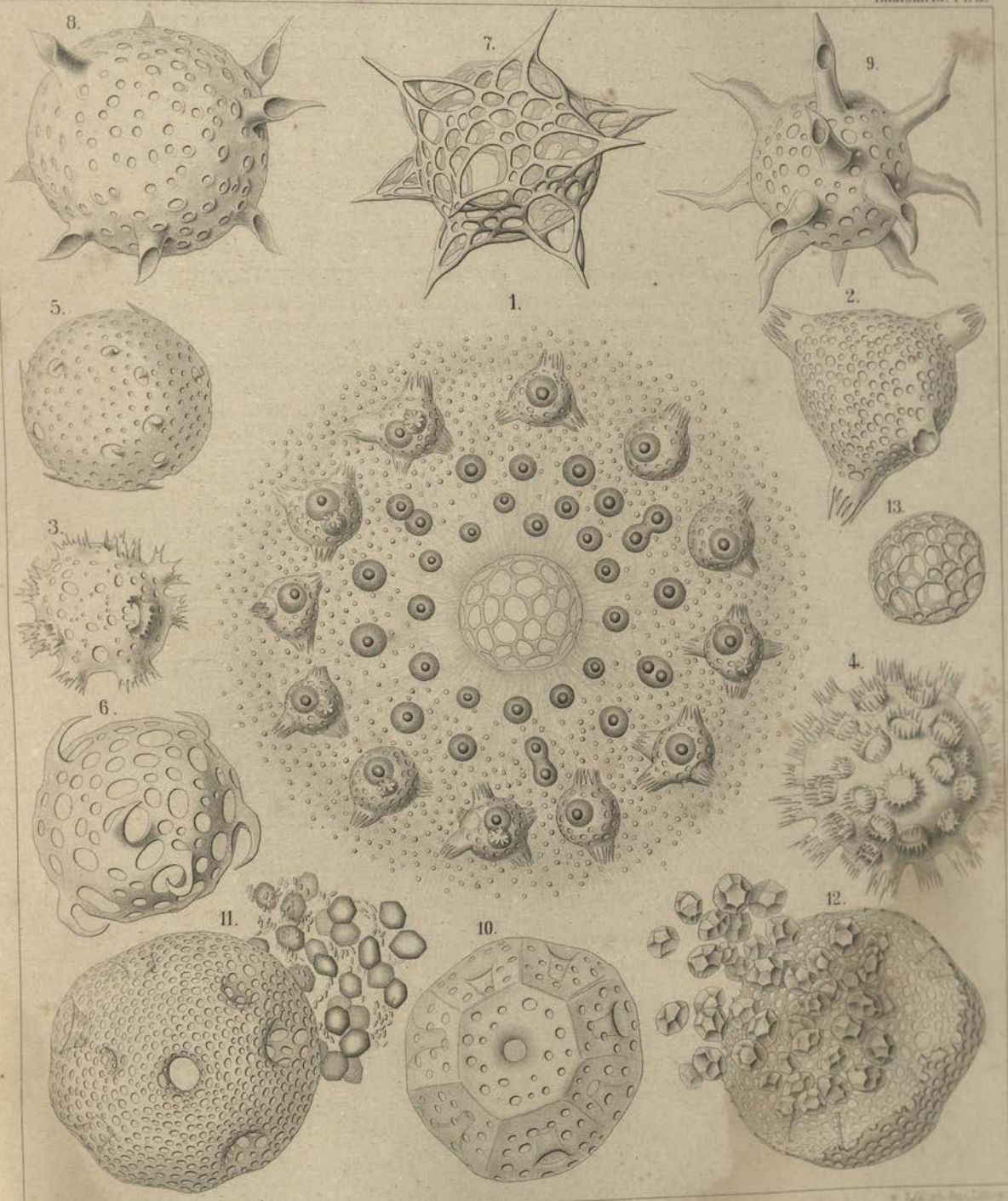
Fig. 3.	*Trypansophæra coronata*, n. sp.,	× 300	110
Fig. 4.	*Trypanosphæra trepanata*, n. sp.,	× 300	110
Fig. 5.	*Odontosphæra monodon*, n. sp.,	× 300	102
Fig. 6.	*Odontosphæra cyrtodon*, n. sp.,	× 300	102
Fig. 7.	*Acrosphæra inflata*, n. sp.,	× 300	101
Fig. 8.	*Mazosphæra hippotis*, n. sp.,	× 400	108
Fig. 9.	*Mazosphæra lagotis*, n. sp.,	× 300	108
Fig. 10.	*Pharyngosphæra stomodæa*, n. sp.,	× 400	98
Fig. 11.	*Buccinosphæra invaginata*, n. sp.,	× 500	99

Each shell contains numerous larger and smaller crystals.

Fig. 12.	*Tribonosphæra centripetalis*, n. sp.,	× 500	98

Each shell contains numerous large crystals.

Fig. 13.	*Collosphæra polygona*, n. sp.,	× 200	96



1-4. TRYPANOSPHAERA, 5-9. MAZOSPHAERA, 10. 11. BUCCINOSPHAERA.
12. 13. COLLOSPHAERA.

PLATE 6.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

Family COLLOSPHÆRIDA.

PLATE 6.

COLLOSPHÆRIDA.

	Diam.	Page
Fig. 1. *Siphonosphæra socialis*, n. sp.,	× 500	106

A small piece of the surface of a living cœnobium, seen from the surface. Only four individuals are visible, the central capsule of which contains numerous small nuclei and a central oil-globule. The including spherical lattice-shell is provided with a few (one to four) larger apertures, which are prolonged into short cylindrical tubules. Through these latter radiate bundles of fine pseudopodia, branching and anastomosing, and forming a fine sarcode network between the alveoles of the calymma. On the surface of the alveolated jelly-sphere the pseudopodia form a dense radiating zone. Xanthella or yellow cells are everywhere scattered.

Fig. 2. *Siphonosphæra socialis*, n. sp.,	× 300	106

A small cœnobium or colony in the state of alveolation, forming a jelly-sphere, composed of a great number of capsulated individuals, densely aggregated. Each central capsule contains an oil-globule, and is enclosed by a spherical lattice-shell, which bears a few (one to four) short cylindrical tubules. Each shell is again enveloped by a membranous polyhedral alveole and separated from it by structureless jelly. The thick cortical jelly-envelope, which surrounds the whole spherical colony, exhibits a fine radial striation, produced by radiating pseudopodia; many xanthellæ or yellow cells are scattered in the calymma.

Fig. 3. *Siphonosphæra pipetta*, n. sp.,	× 300	108
Fig. 4. *Siphonosphæra tubulosa*, J. Müller,	× 300	105

The central capsule, enclosed in the cavity of the shell, has a central oil-globule, and is surrounded by a few xanthella.

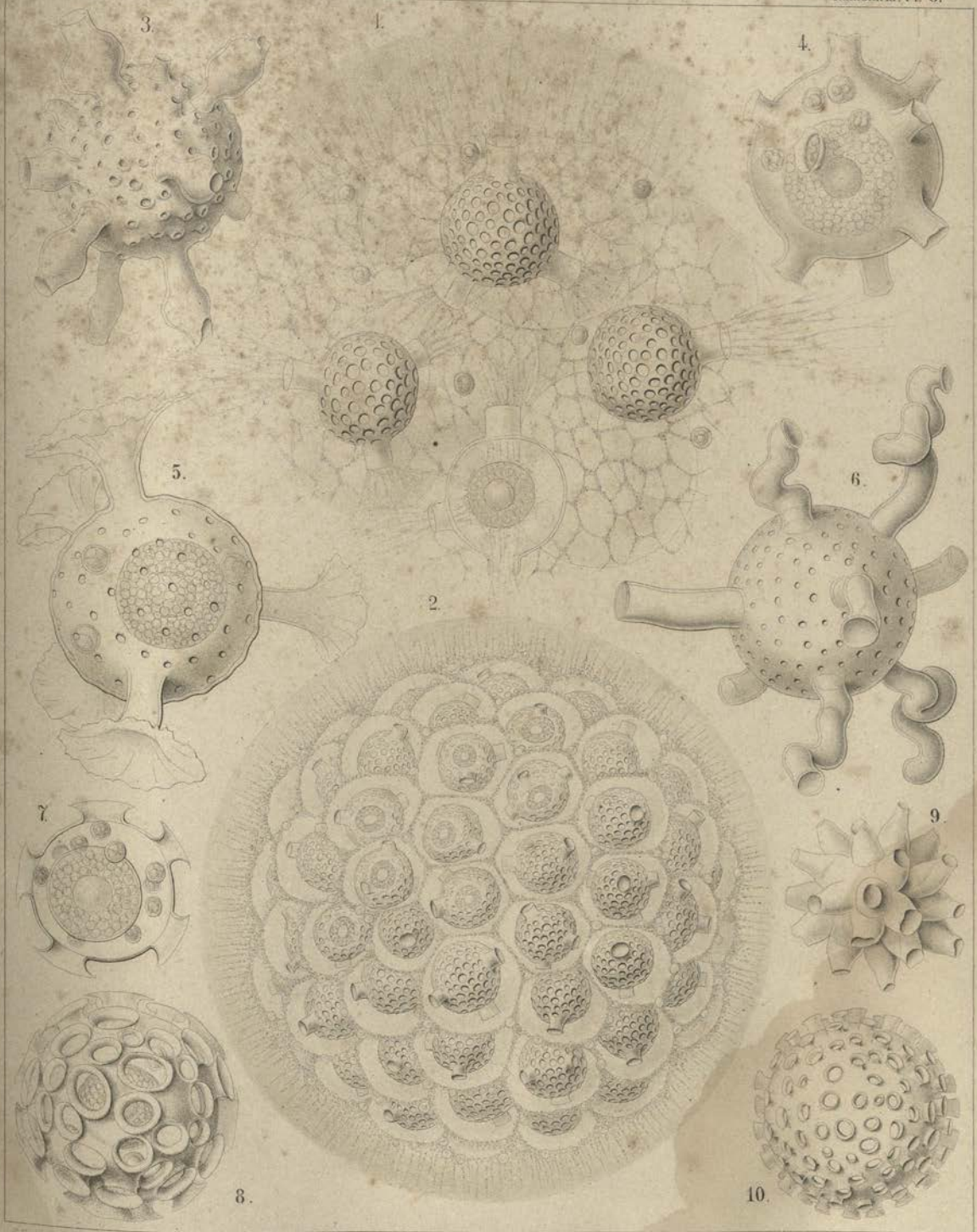
Fig. 5. *Siphonosphæra chonophora*, n. sp.,	× 300	107

Central capsule as in figs. 4 and 7.

Fig. 6. *Siphonosphæra serpula*, n. sp.,	× 300	107
Fig. 7. *Siphonosphæra patinaria*, n. sp.,	× 300	105

The central capsule, enclosed in the cavity of the shell, contains a central oil-globule, and is surrounded by a few xanthella.

Fig. 8. *Siphonosphæra patinaria*, n. sp.,	× 300	105
Fig. 9. *Siphonosphæra conifera*, n. sp.,	× 300	106
Fig. 10. *Siphonosphæra cyathina*, n. sp.,	× 300	105



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SIPHONOSPHAERA.

PLATE 7.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

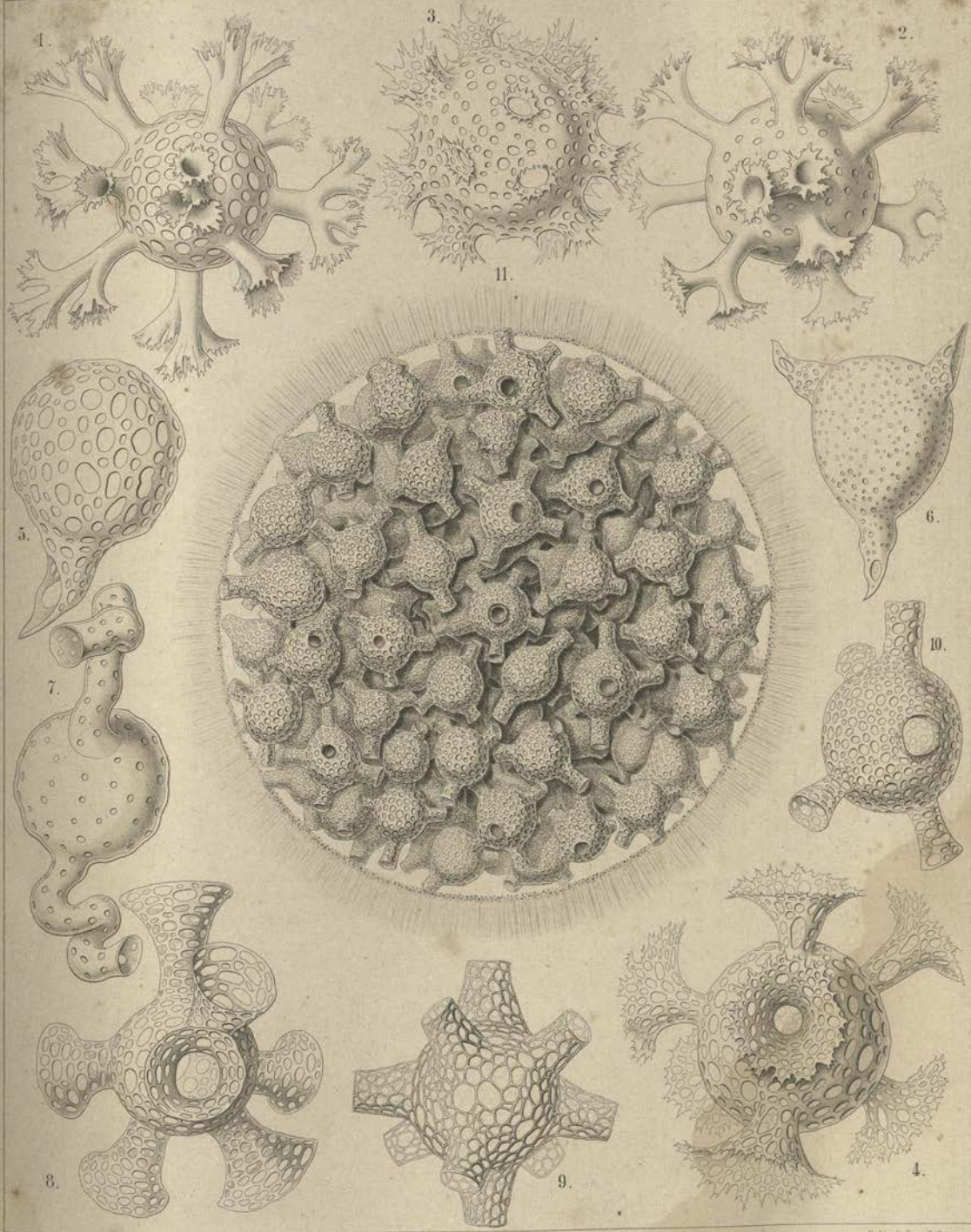
Family COLLOSPHÆRIDA.

PLATE 7.

COLLOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Caminosphæra dendrophora*, n. sp.,	× 300	112
Fig. 2.	*Caminosphæra dichotoma*, n. sp.,	× 300	112
Fig. 3.	*Coronosphæra diadema*, n. sp.,	× 300	117
Fig. 4.	*Coronosphæra calycina*, n. sp.,	× 300	117
Fig. 5.	*Otosphæra auriculata*, n. sp.,	× 300	116
Fig. 6.	*Otosphæra polymorpha*, n. sp.,	× 300	116
Fig. 7.	*Solenosphæra serpentina*, n. sp.,	× 300	114
Fig. 8.	*Solenosphæra cornucopia*, n. sp.,	× 300	115
Fig. 9.	*Solenosphæra ascensionis*, n. sp.,	× 300	115
Fig. 10.	*Solenosphæra pandora*, n. sp.,	× 300	113
Fig. 11.	*Solenosphæra pandora*, n. sp.,	× 100	113

An entire spherical cœnobium. The shells of the colony bear a variable number of fenestrated radial tubes and are densely crowded in the jelly-sphere of the calymma, the cortical zone of which is radially striped.



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1, 2. CAMINOSPHAERA, 3, 4. CORONOSPHAERA, 5, 6. OTOSPHAERA,
7–11. SOLENOSPHAERA.

PLATE 8.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

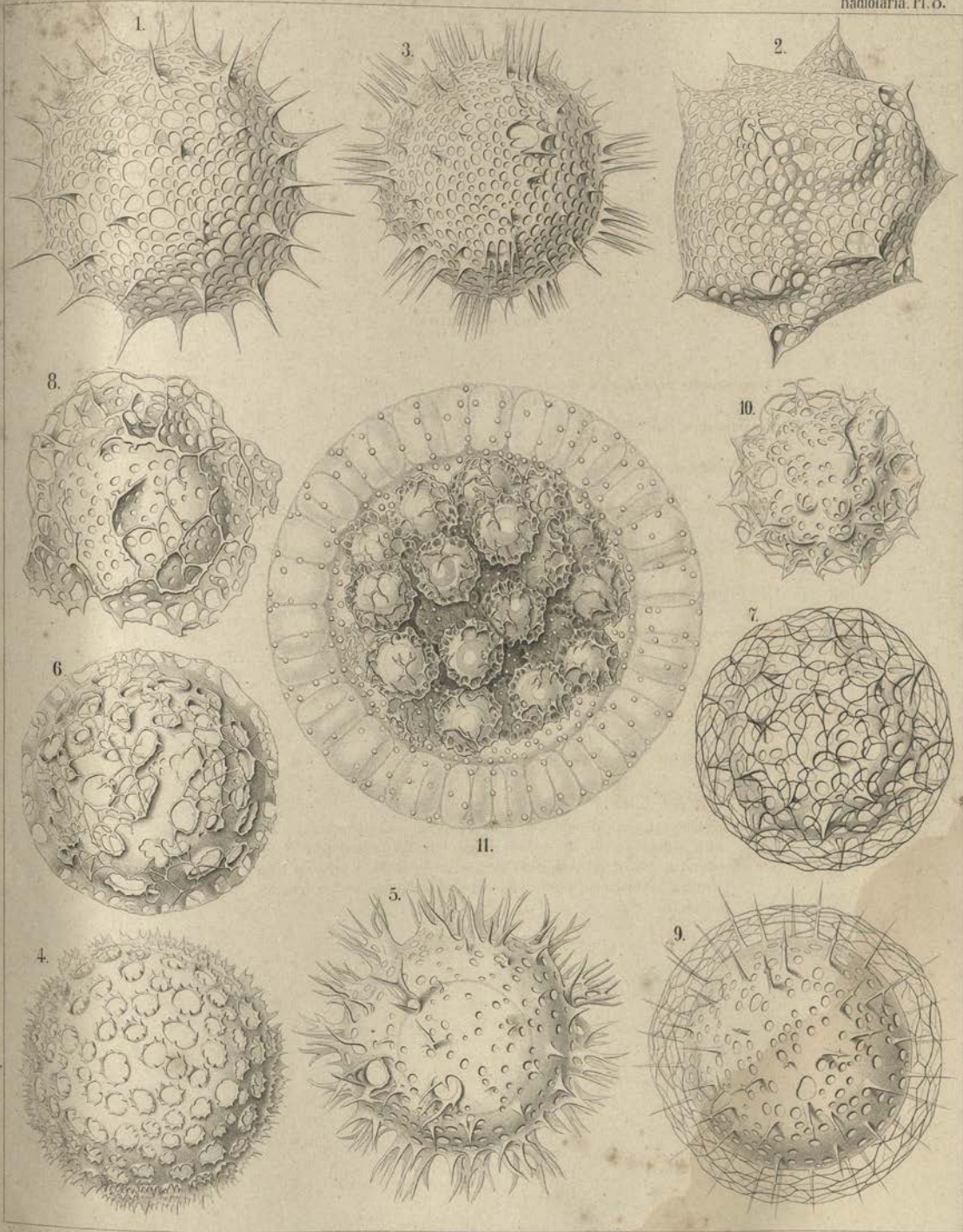
Family COLLOSPHÆRIDA.

PLATE 8.

COLLOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Acrosphæra echinoides*, n. sp.,	× 400	100
Fig. 2.	*Acrosphæra collina*, n. sp.,	× 300	101
Fig. 3.	*Chœnicosphæra nassiterna*, n. sp.,	× 400	103
Fig. 4.	*Chœnicosphæra murrayana*, n. sp.,	× 300	102
Fig. 5.	*Chœnicosphæra flammabunda*, n. sp.,	× 300	103
Fig. 6.	*Clathrosphæra circumtexta*, n. sp.,	× 400	118
Fig. 7.	*Clathrosphæra arachnoides*, n. sp.,	× 300	119
Fig. 8.	*Clathrosphæra lamellosa*, n. sp.,	× 300	119
Fig. 9.	*Xanthiosphæra erinacea*, n. sp.,	× 400	120
Fig. 10.	*Xanthiosphæra lappacea*, n. sp.,	× 300	120
Fig. 11.	*Xanthiosphæra lappacea*, n. sp.,	× 100	120

A complete spherical cœnobium. The associated central capsules (each with a double shell) are densely crowded in the central part of the calymma, whilst its peripheral part is occupied by a layer of large alveoles. Numerous xanthellæ or yellow cells are scattered in the calymma.



1, 2. ACROSPHAERA. 3–5. CHOENICOSPHAERA. 6–8. CLATHROSPHAERA.
9–11. XANTHIOSPHAERA.

PLATE 9.

Legion SPUMELLARIA.

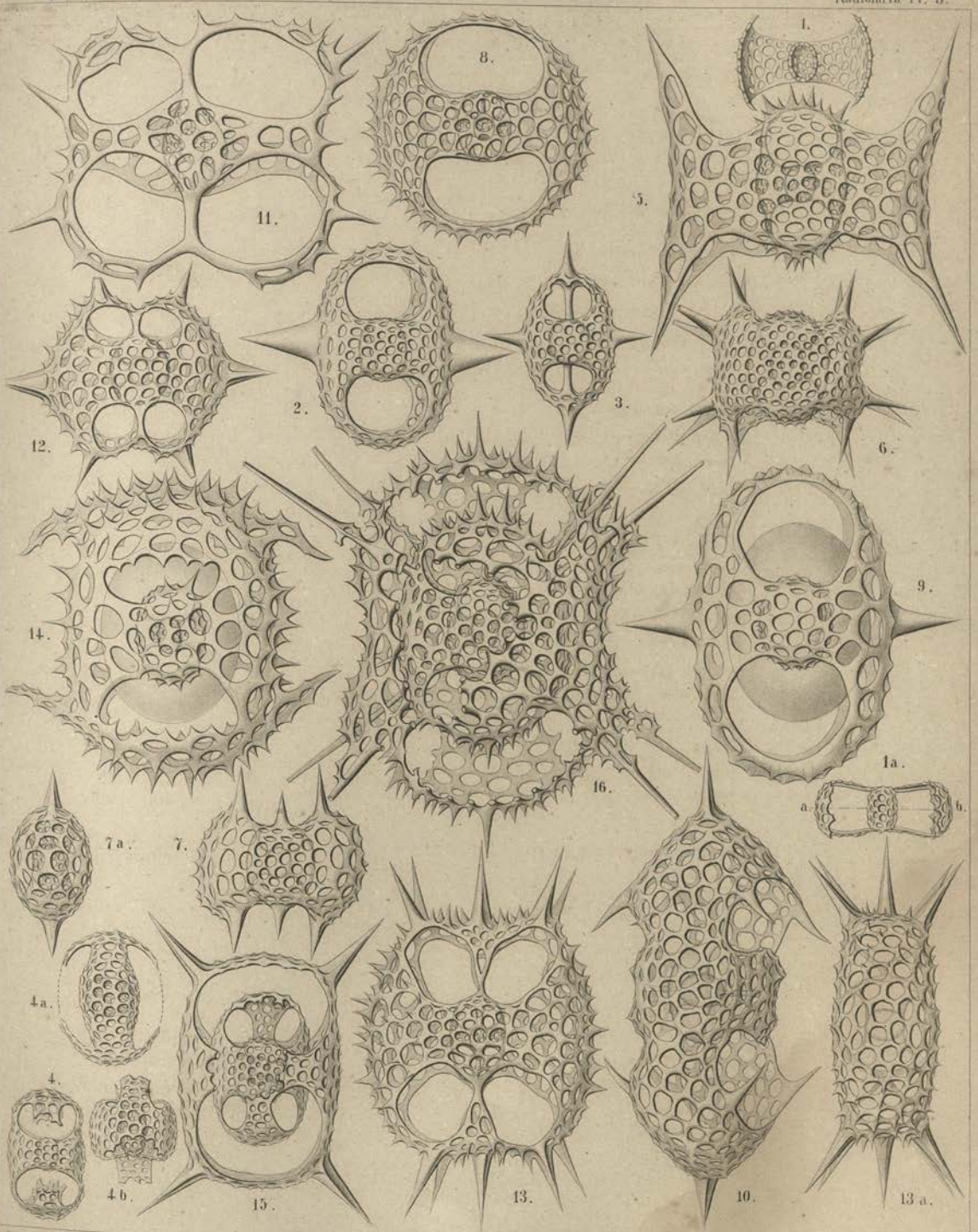
Order LARCOIDEA.

Family PYLONIDA.

PLATE 9.

PYLONIDA.

		Diam.	Page
Fig. 1.	*Monozonium alatum*, n. sp., Dorsal view. Fig. 1*a*. Apical view.	× 300	633
Fig. 2.	*Dizonium pleuracanthum*, n, sp.,	× 400	636
Fig. 3.	*Dizonium stauracanthum*, n. sp.,	× 300	636
Fig. 4.	*Trizonium tricinctum*, n. sp., Dorsal view. Fig. 4*a*. Lateral view. Fig. 4*b*. Apical view.	× 300	637
Fig. 5.	*Amphipyle tetraceros*, n. sp., Dorsal view.	× 400	642
Fig. 6.	*Amphipyle callizona*, n. sp., Dorsal view.	× 300	644
Fig. 7.	*Amphipyle amphiptera*, n. sp., Dorsal view. Fig. 7*a*. Lateral view.	× 300	642
Fig. 8.	*Tetrapyle circularis*, n. sp., Dorsal view.	× 300	645
Fig. 9.	*Tetrapyle pleuracantha*, n. sp., Dorsal view. The lentelliptical central capsule is visible between medullary and cortical shell.	× 400	646
Fig. 10.	*Tetrapyle turrita*, n. sp., Oblique view, half dorsal, half lateral.	× 400	649
Fig. 11.	*Octopyle stenozona*, n. sp., Dorsal view.	× 400	652
Fig. 12.	*Octopyle sexangulata*, n. sp., Dorsal view.	× 300	653
Fig. 13.	*Octopyle decastyle*, n. sp., Dorsal view. Fig. 13*a*. Lateral view.	× 300	654
Fig. 14.	*Pylonium quadricorne*, n. sp., Dorsal view.	× 400	655
Fig. 15.	*Tetrapylonium quadrangulare*, n. sp., Dorsal view.	× 300	658
Fig. 16.	*Pylozonium octacanthum*, n. sp., Dorsal view.	× 300	660



1-4. TRIZONIUM, 5-7. AMPHIPYLE, 8-10. TETRAPYLE,
11-13. OCTOPYLE, 14-16 PYLONIUM.

PLATE 10.

Legion SPUMELLARIA.

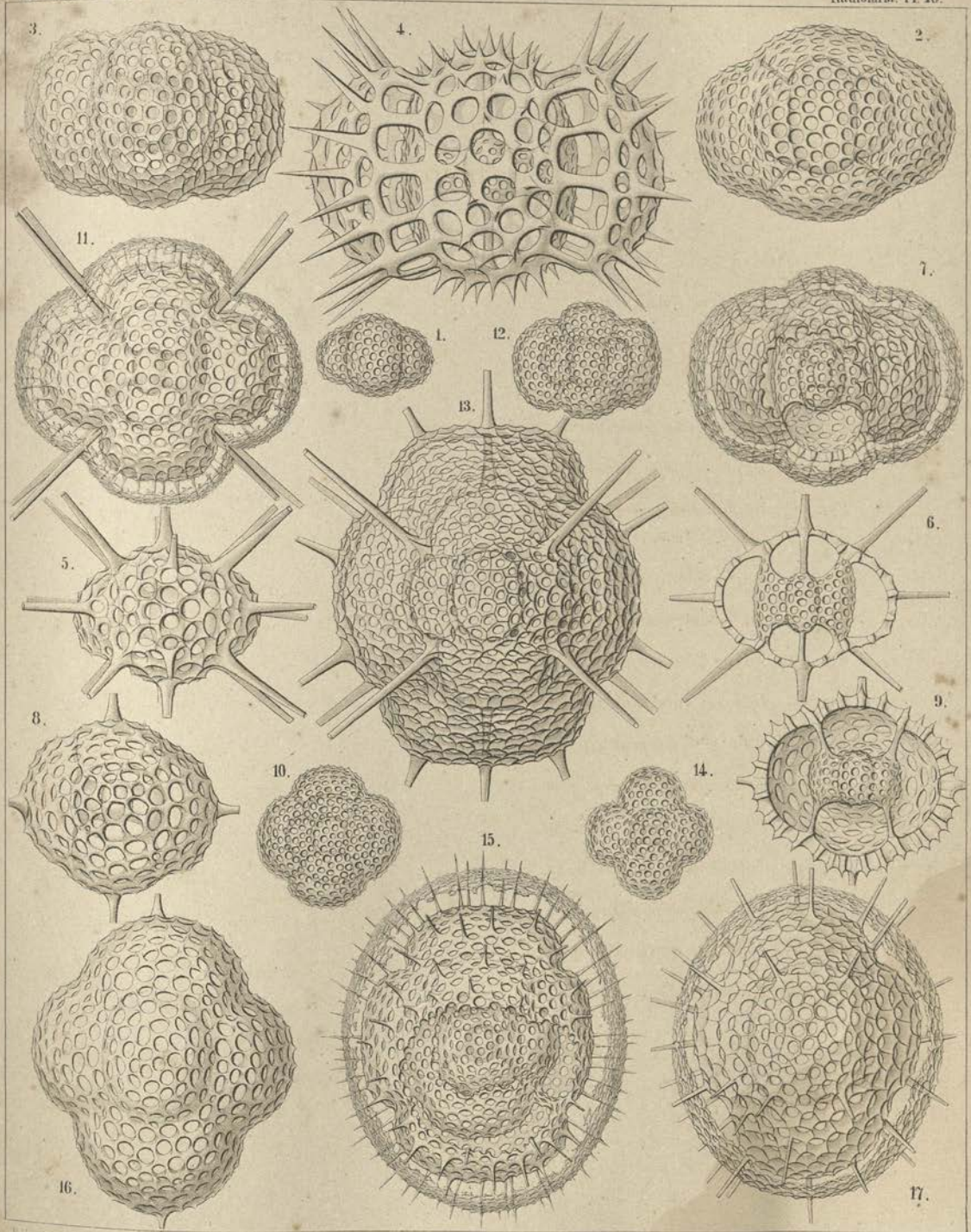
Order LARCOIDEA.

Family THOLONIDA.

PLATE 10.

THOLONIDA.

		Diam.	Page
Fig. 1.	*Tholartus tricolus*, n. sp.,	× 200	664
Fig. 2.	*Tholodes cupula*, n. sp.,	× 500	665
Fig. 3.	*Amphitholus artiscus*, n. sp.,	× 400	666
Fig. 4.	*Amphitholus panicium*, n. sp.,	× 500	668
Fig. 5.	*Amphitholus acanthometra*, n. sp.,	× 300	667
Fig. 6.	*Amphitholus acanthometra*, n. sp., Frontal section of the shell.	× 300	667
Fig. 7.	*Amphitholonium tricolonium*, n. sp.,	× 300	669
Fig. 8.	*Staurotholus tetrastylus*, n. sp.,	× 300	673
Fig. 9.	*Staurotholus dodecastylus*, n. sp.,	× 400	674
Fig. 10.	*Tholoma quadrigeminum*, n. sp.,	× 200	672
Fig. 11.	*Staurotholonium octodoronium*, n. sp.,	× 300	676
Fig. 12.	*Tholocubus tessellatus*, n. sp.,	× 200	677
Fig. 13.	*Tholoma metallasson*, n. sp.,	× 300	672
Fig. 14.	*Cubotholus regularis*, n. sp.,	× 200	680
Fig. 15.	*Cubotholonium ellipsoides*, n. sp.,	× 300	682
Fig. 16.	*Tholocubus tesseralis*, n. sp.,	× 400	678
Fig. 17.	*Tholonium hexonium*,	× 400	679



E. Haeckel ad nat. delin.

Kühnsch. Jena. Lithogr.

1. 2. THOLARTUS, 3–7. AMPHITHOLUS, 8–10. STAUROTHOLUS,
11–13. THOLOMA, 14. 15. CUBOTHOLUS, 16. 17. THOLONIUM.

PLATE 11.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 11.

ASTROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Lychnosphæra regina*, n. sp., ...	× 200	277

The entire shell and the central capsule. Numerous club-shaped radial apophyses or cœcal sacs arise from the pink central capsule and are protruded through the pores of the medullary shell, which is completely hidden by them. The sarcomatrix in the calymma, surrounding the central capsule, exhibits a fine radial striation. Numerous retracted pseudopodia, bearing red granules, arise from the sarcomatrix and pierce the calymma radially. The interval between the two concentric shells is filled up by the hyaline calymma.

Fig. 2.	*Lychnosphæra regina*, n. sp., ...	× 400	277

A part of the cortical shell, with a radial spine.

Fig. 3.	*Lychnosphæra regina*, n. sp., ...	× 400	277

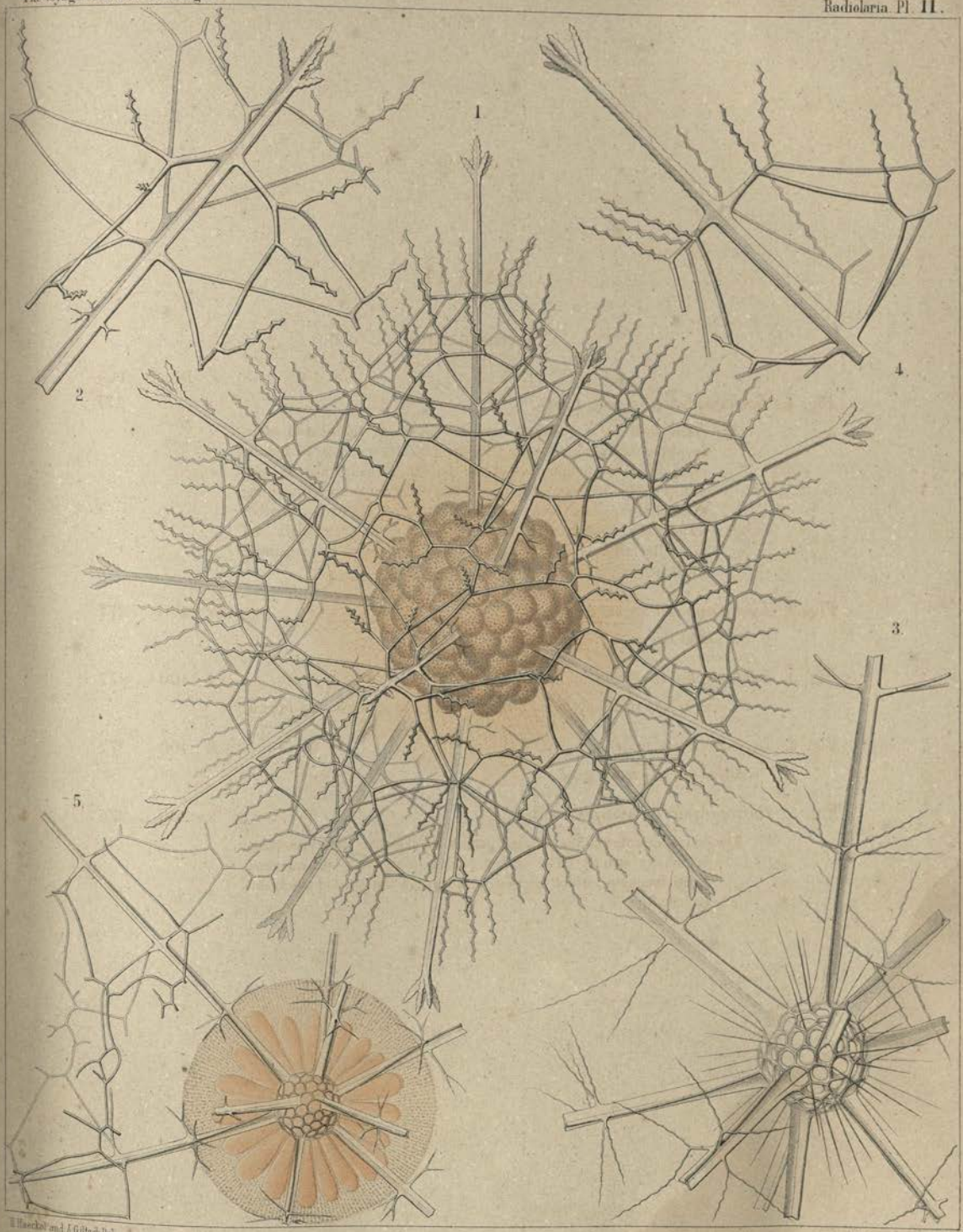
The medullary shell and the basal parts of the radial spines arising from it.

Fig. 4.	*Lychnosphæra regina*, n. sp., ...	× 400	277

Distal end of a radial spine.

Fig. 5.	*Rhizoplegma lychnosphæra*, n. sp., ...	× 200	276

The central capsule and the enclosed parts of the skeleton. The protoplasm is radially striped. The central nucleus (red) sends out numerous radial apophyses, which are protruded through the pores of the medullary shell.



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LYCHNOSPHAERA.

PLATE 12.

Legion SPUMELLARIA.

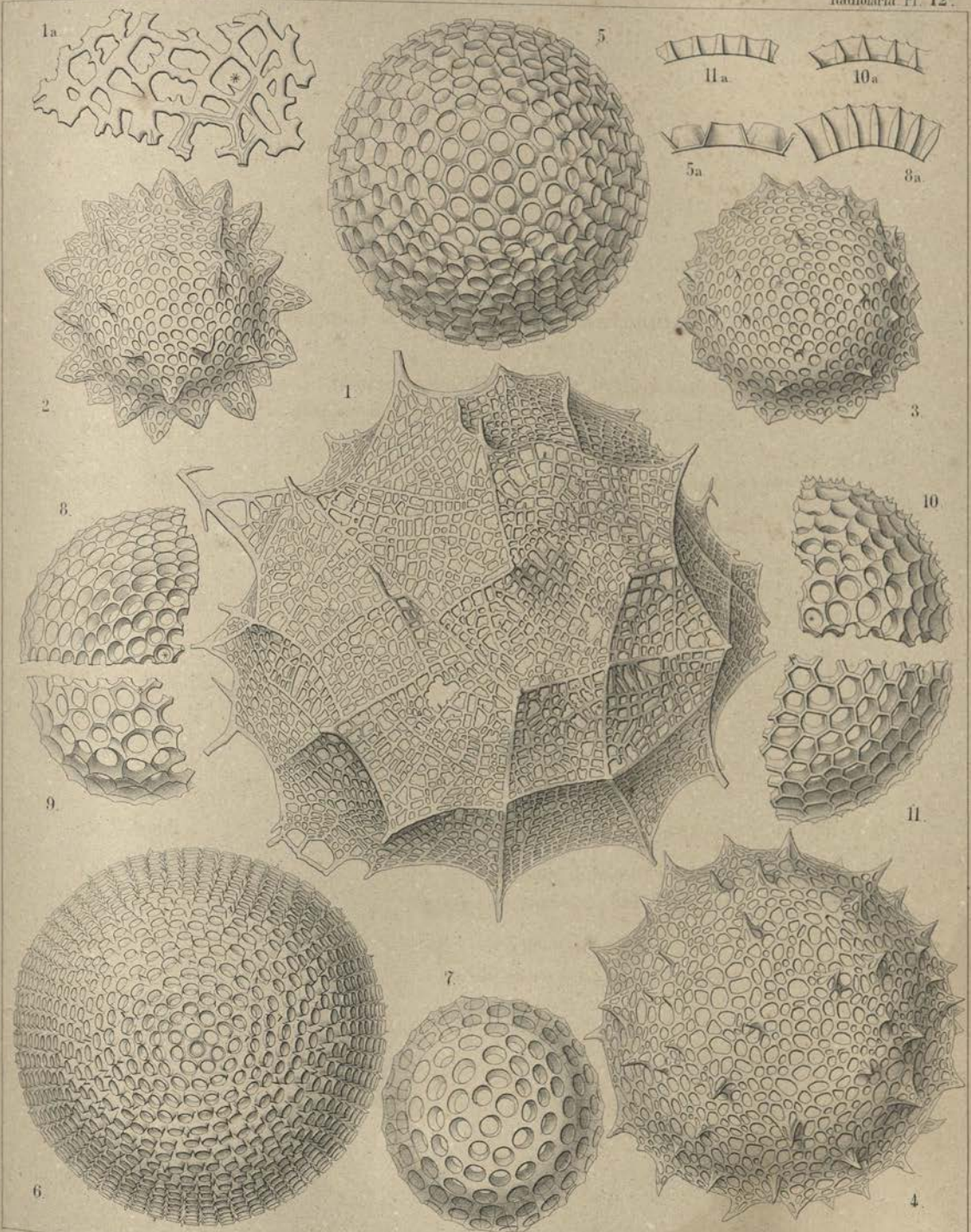
Orders PHÆOSPHÆRIA ET SPHÆROIDEA.

Families OROSPHÆRIDA, ASTROSPHÆRIDA et LIOSPHÆRIDA.

PLATE 12.

OROSPHÆRIDA, ASTROSPHÆRIDA et LIOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Orosphæra huxleyii*, n. sp. (vel *Oroscena huxleyii*), . .	× 50	1599
	Fig. 1*a*. A piece of the network, the bars of which contain partly an axial canal, ...	× 200	1599
Fig. 2.	*Conosphæra orthoconus*, n. sp., ...	× 200	221
Fig. 3.	*Conosphæra platyconus*, n. sp., ...	× 300	221
Fig. 4.	*Conosphæra plagioconus*, n. sp., ...	× 300	222
Fig. 5.	*Ethmosphæra conosiphonia*, n. sp., ...	× 400	69
	Fig. 5*a*. Vertical section through the wall.		
Fig. 6.	*Ethmosphæra polysiphonia*, n. sp., ...	× 400	70
Fig. 7.	*Cenosphæra compacta*, n. sp., ...	× 300	65
Fig. 8.	*Cenosphæra elysia*, n. sp., ...	× 300	64
	Fig. 8*a*. Vertical section through the wall.		
Fig. 9.	*Cenosphæra mellifica*, n. sp., ...	× 300	62
Fig. 10.	*Cenosphæra favosa*, n. sp., ...	× 300	62
	Fig. 10*a*. Vertical section through the wall.		
Fig. 11.	*Cenosphæra vesparia*, n. sp., ...	× 300	62
	Fig. 11*a*. Vertical section through the wall.		



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1. OROSPHAERA. 2-4. CONOSPHAERA, 5.6. ETHMOSPHAERA.
7-11. CERIOSPHAERA.

PLATE 13.

Legion SPUMELLARIA.

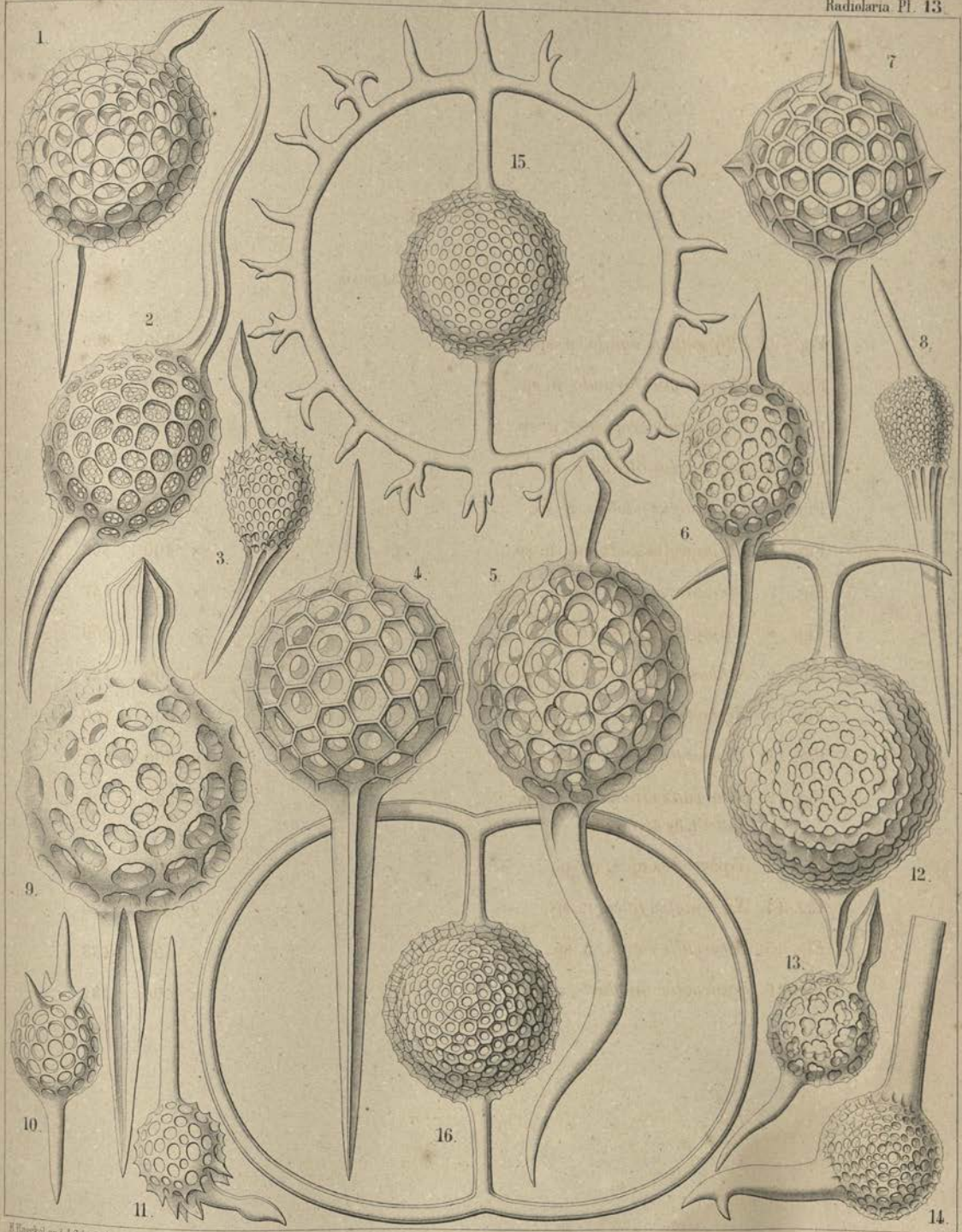
Orders SPHÆROIDEA ET PRUNOIDEA.

Families. STYLOSPHÆRIDA et ELLIPSIDA.

PLATE 13.

STYLOSPHÆRIDA et ELLIPSIDA.

		Diam.	Page
Fig. 1.	*Ellipsostylus aquila*, n. sp.,	× 300	300
Fig. 2.	*Ellipsostylus hirundo*, n. sp.,	× 300	301
Fig. 3.	*Ellipsostylus columba*, n. sp.,	× 300	300
Fig. 4.	*Xiphostylus alcedo*, n. sp.,	× 400	127
Fig. 5.	*Xiphostylus edolius*, n. sp.,	× 400	130
Fig. 6.	*Ellipsostylus psittacus*, n. sp.,	× 400	300
Fig. 7.	*Stylostaurus caudatus*, n. sp.,	× 400	157
Fig. 8.	*Ellipsostylus ciconia*, n. sp.,	× 300	300
Fig. 9.	*Xiphostylus phasianus*, n. sp.,	× 400	127
Fig. 10.	*Xiphostylus trochilus*, n. sp.,	× 300	129
Fig. 11.	*Xiphostylus emberiza*, n. sp.,	× 300	131
Fig. 12.	*Saturnalis circoideus*, n. sp., Not fully developed.	× 400	132
Fig. 13.	*Xiphostylus alca*, n. sp.,	× 300	130
Fig. 14.	*Xiphostylus falco*, n. sp.,	× 300	130
Fig. 15.	*Saturnalis rotula*, n. sp.,	× 400	133
Fig. 16.	*Saturnalis annularis*, n. sp.,	× 400	132



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1-14. XIPHOSTYLUS . 15. 16. SATURNALIS.

PLATE 14.

Legion SPUMELLARIA.

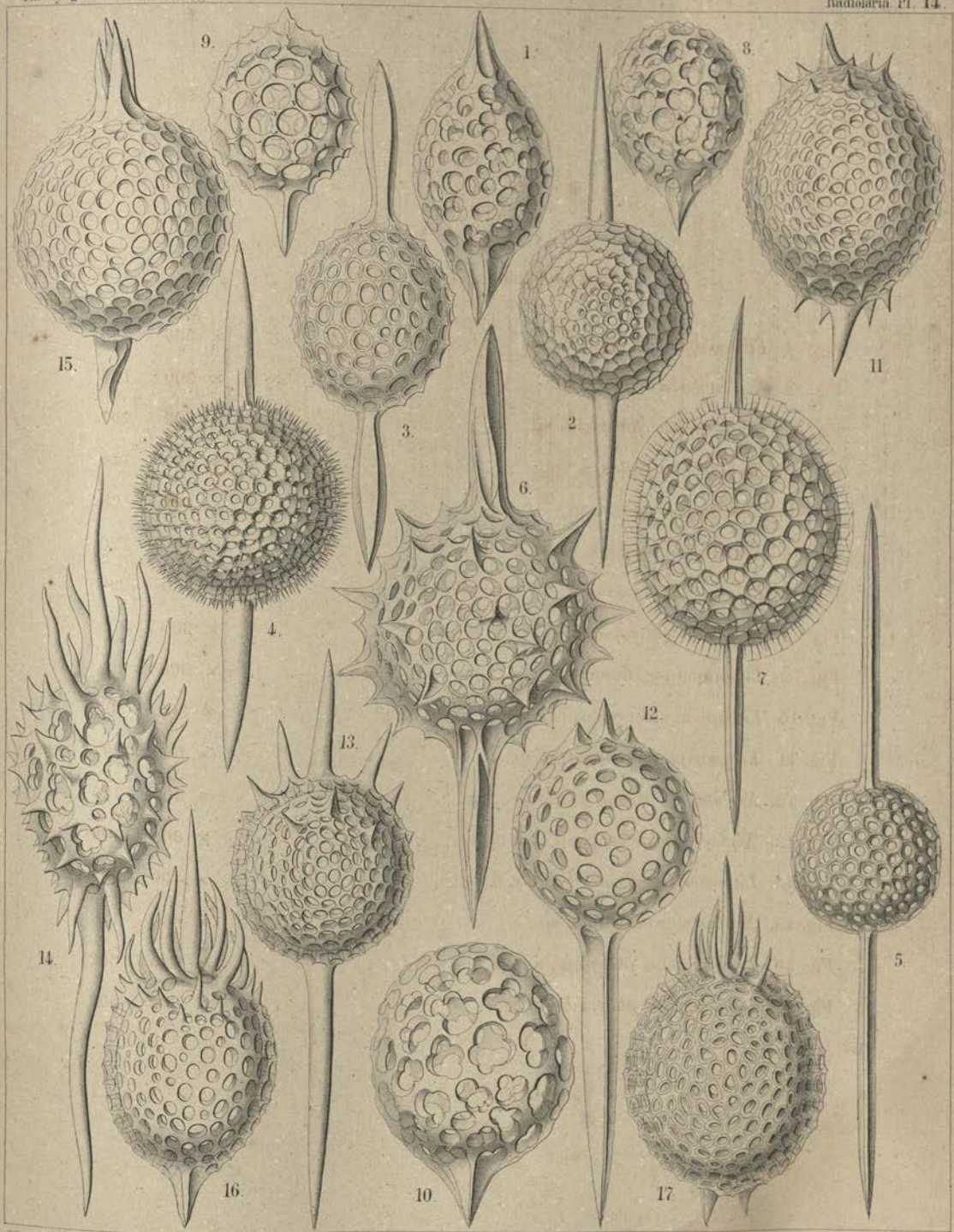
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA et ELLIPSIDA.

PLATE 14.

STYLOSPHÆRIDA et ELLIPSIDA.

		Diam.	Page
Fig. 1.	*Ellipsoxiphus atractus*, n. sp.,	× 300	298
Fig. 2.	*Xiphosphæra venus*, n. sp.,	× 300	123
Fig. 3.	*Ellipsoxiphus claviger*, n. sp.,	× 300	297
Fig. 4.	*Xiphosphæra pallas*, n. sp.,	× 400	124
Fig. 5.	*Xiphosphæra gæa*, n. sp.,	× 400	123
Fig. 6.	*Xiphosphæra vesta*, n. sp.,	× 300	126
Fig. 7.	*Ellipsoxiphus elegans*, n. sp., var. *palliatus*,	× 400	296
Fig. 8.	*Lithapium halicapsa*, n. sp.,	× 300	303
Fig. 9.	*Lithapium pyriforme*, n. sp.,	× 300	303
Fig. 10.	*Lithapium monocyrtis*, n. sp.,	× 300	304
Fig. 11.	*Ellipsoxiphus bipolaris*, n. sp.,	× 600	297
Fig. 12.	*Xiphostylus trogon*, n. sp.,	× 400	129
Fig. 13.	*Xiphostylus picus*, n. sp.,	× 300	129
Fig. 14.	*Lithomespilus flammabundus*, n. sp.,	× 400	303
Fig. 15.	*Xiphostylus alauda*, n. sp.,	× 400	128
Fig. 16.	*Lithomespilus phloginus*, n. sp.,	× 600	302
Fig. 17.	*Lithomespilus phlogoides*, n. sp.,	× 600	302



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1 - 11. XIPHOSPHAERA, 12 - 17. LITHOMESPILUS.

PLATE 15.

Legion SPUMELLARIA.

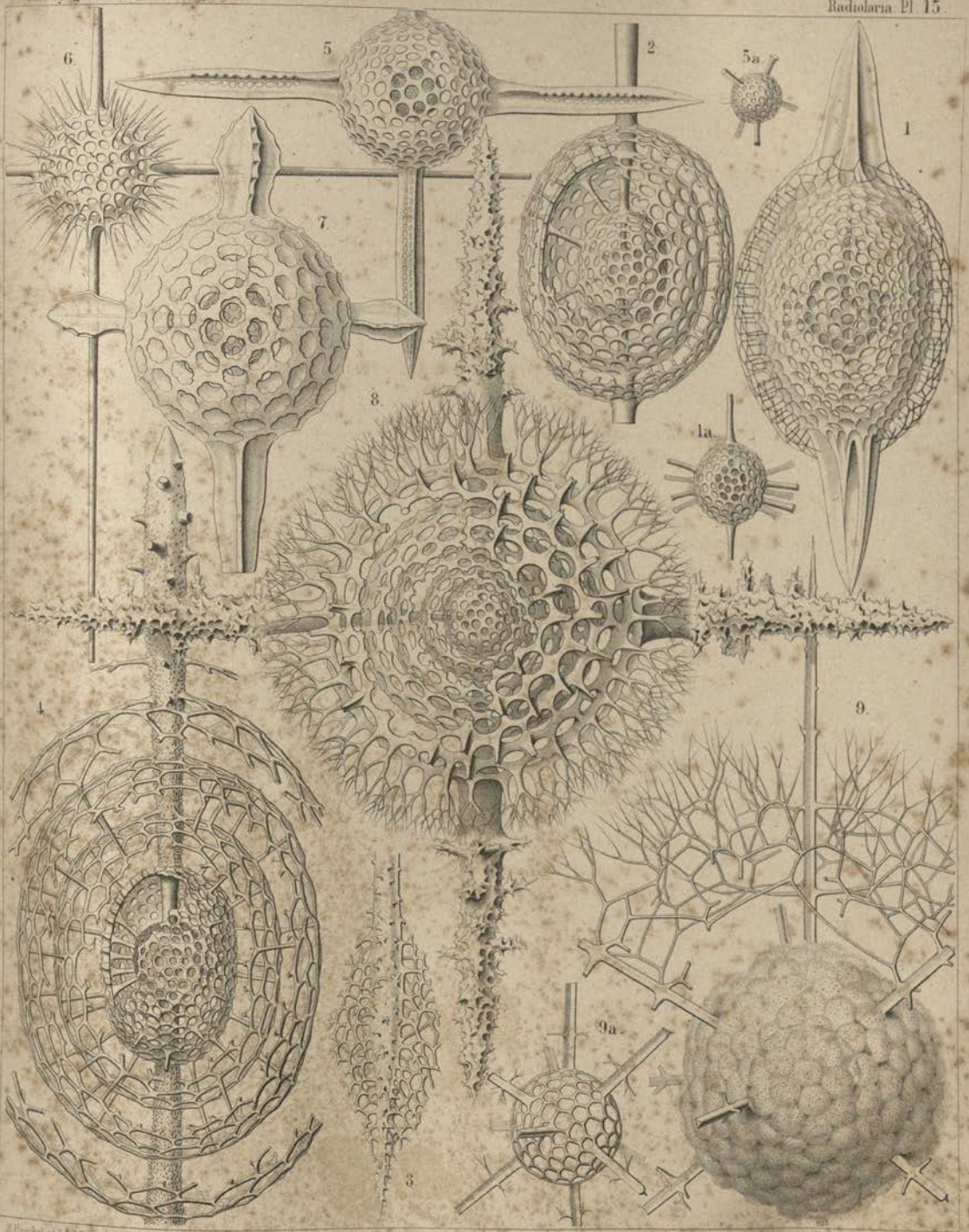
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STAUROSPHÆRIDA et DRUPPULIDA.

PLATE 15.

STAUROSPHÆRIDA et DRUPPULIDA.

		Diam.	Page
Fig. 1.	*Cromyatractus tetracelyphus*, n. sp.,	× 300	335
	Fig. 1*a*. The two inner medullary shells.		
Fig. 2.	*Cromyatractus tetraphractus*, n. sp.,	× 300	335
Fig. 3.	*Cromyatractus cepicius*, n. sp.,	× 300	336
	The spongy distal part of a polar spine.		
Fig. 4.	*Cromyatractus ceparius*, n. sp. (vel *Caryostylus ceparius*),	× 300	336
Fig. 5.	*Staurolonche pertusa*, n. sp.,	× 300	159
	Fig. 5*a*. Its medullary shell.		
Fig. 6.	*Staurosphæra philippi*, n. sp.,	× 300	154
Fig. 7.	*Stauroxiphus gladius*, n. sp.,	× 400	163
Fig. 8.	*Staurocaryum arborescens*, n. sp.,	× 300	167
Fig. 9.	*Rhizoplegma radicatum*, n. sp.,	× 200	276
	Fig. 9*a*. The medullary shell, which is completely hidden in fig. 9 by the numerous club-shaped apophyses of the central capsule.		



1, 2 STYLOCROMYUM, 3, 4 CARYOSTYLOS, 5-7 STAUROLONCHE.
8 STAUROCARYUM, 9 RHIZOPLEGMA.

PLATE 16.

Legion SPUMELLARIA.

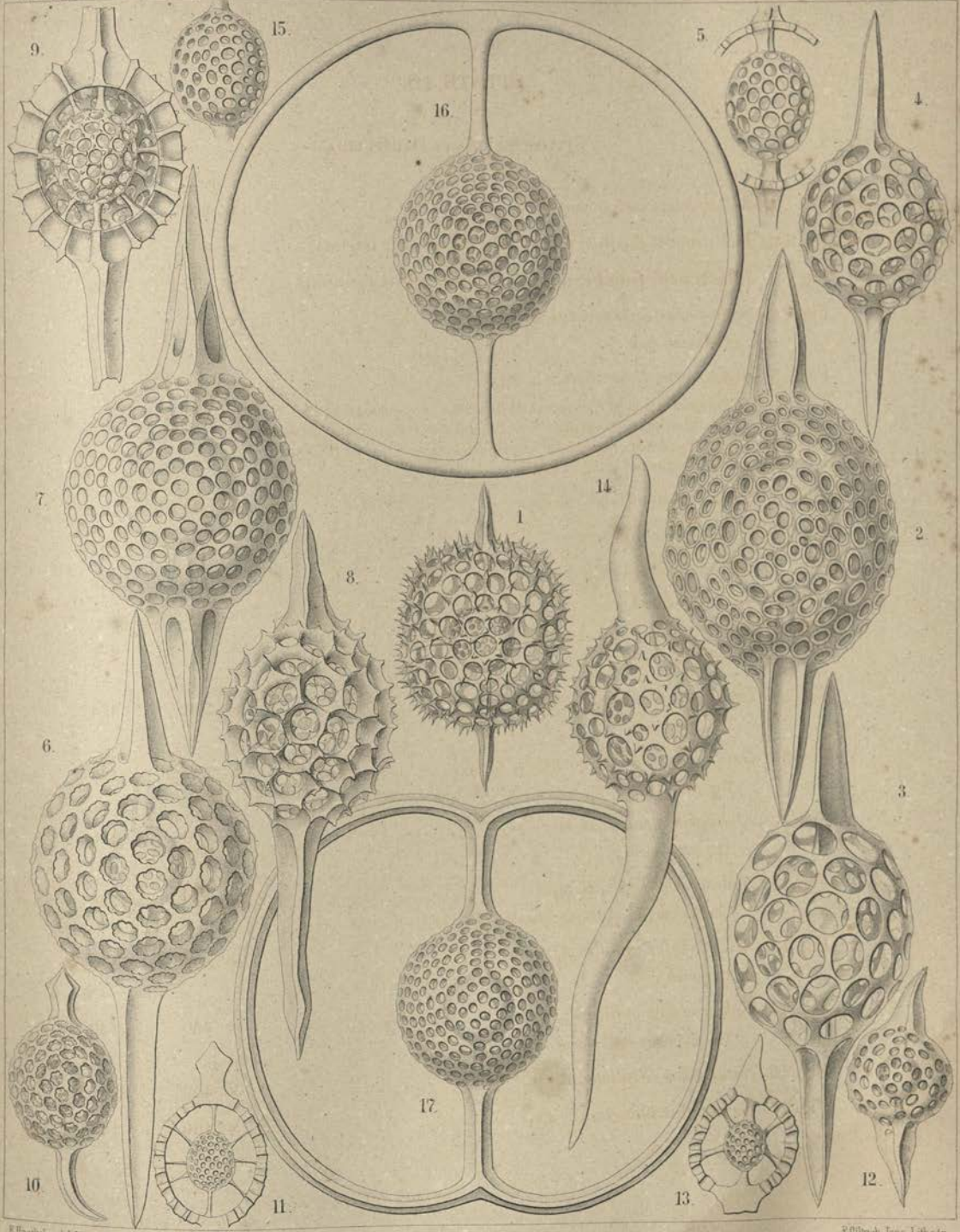
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA et DRUPPULIDA.

PLATE 16.

STYLOSPHÆRIDA et DRUPPULIDA.

		Diam.	Page
Fig. 1.	*Stylosphæra melpomene*, n. sp.,	× 300	135
Fig. 2.	*Lithatractus jugatus*, n. sp. (vel *Stylosphæra jugata*),	× 400	323
Fig. 3.	*Lithatractus fragilis*, n. sp. (vel *Stylosphæra fragilis*),	× 400	319
Fig. 4.	*Stylosphæra lithatractus*, n. sp.,	× 300	
	The entire shell.		
Fig. 5.	*Stylosphæra lithatractus*, n. sp.,	× 300	
	The greater part of the cortical shell and the two spines taken off. The description of *Stylosphæra lithatractus* (intermediate between *Stylosphæra jugata* and *Stylosphæra terpsichore*, p. 137) is by mistake not given in the text.		
Fig. 6.	*Stylosphæra calliope*, n. sp.,	× 400	134
Fig. 7.	*Stylosphæra clio*, n. sp.,	× 400	134
Fig. 8.	*Druppatractus ostracion*, n. sp.,	× 300	326
	The entire shell.		
Fig. 9.	*Druppatractus ostracion*, n. sp.,	× 300	326
	The anterior half of the cortical shell has been removed.		
Fig. 10.	*Druppatractus hippocampus*, n. sp.,	× 300	324
	The entire shell.		
Fig. 11.	*Druppatractus hippocampus*, n. sp.,	× 300	324
	The greater part of the cortical shell has been removed.		
Fig. 12.	*Stylosphæra nana*, n. sp.,	× 300	136
	The entire shell.		
Fig. 13.	*Stylosphæra nana*, n. sp.,	× 300	136
	The greater part of the cortical shell taken off.		
Fig. 14.	*Sphærostylus ophidium*, n. sp.,	× 300	140
	The entire shell.		
Fig. 15.	*Sphærostylus ophidium*, n. sp.,	× 300	140
	The medullary shell alone.		
Fig. 16.	*Saturnulus ellipticus*, n. sp.,	× 400	141
Fig. 17.	*Saturnulus planetes*, n. sp.,	× 400	142



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1–15. STYLOSPHAERA . 16. 17. SATURNULUS .

PLATE 17.

Legion SPUMELLARIA.

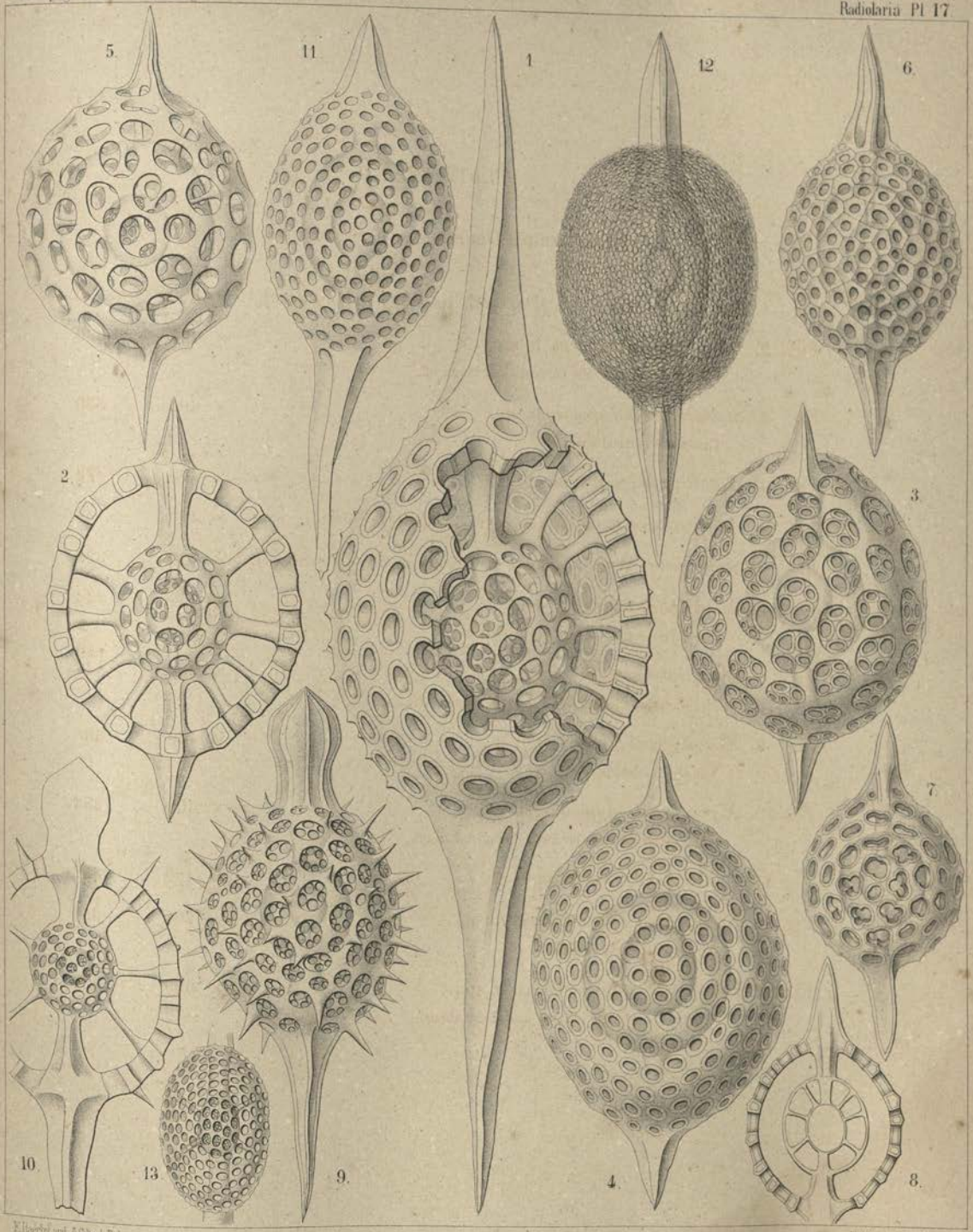
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA, DRUPPULIDA et SPONGURIDA.

PLATE 17.

STYLOSPHÆRIDA, DRUPPULIDA et SPONGURIDA.

		Diam.	Page
Fig. 1.	*Stylatractus giganteus*, n. sp. (vel *Amphistylus giganteus*),	× 300	329
Fig. 2.	*Stylatractus sethoporus*, n. sp. The greater part of the cortical shell taken off.	× 400	330
Fig. 3.	*Stylatractus sethoporus*, n. sp., The entire cortical shell.	× 400	330
Fig. 4.	*Stylatractus compactus*, n. sp.,	× 400	329
Fig. 5.	*Amphisphæra cronos*, n. sp. (vel *Amphistylus cronos*),	× 400	144
Fig. 6.	*Stylatractus neptunus*, n. sp. (vel *Amphisphæra neptunus*),	× 300	328
Fig. 7.	*Amphisphæra pluto*, n. sp., The entire cortical shell.	× 300	144
Fig. 8.	*Amphisphæra pluto*, n. sp., Meridional section through the three concentric shells.	× 300	144
Fig. 9.	*Xiphatractus glyptodon*, n. sp., The entire cortical shell.	× 400	334
Fig. 10.	*Xiphatractus glyptodon*, n. sp., The greater part of the cortical shell taken off.	× 400	334
Fig. 11.	*Xiphatractus armadillo*, n. sp.	× 400	332
Fig. 12.	*Spongoxiphus prunococcus*, n. sp., The spongy cortical shell.	× 300	354
Fig. 13.	*Spongoxiphus prunococcus*, n. sp., The two concentric latticed medullary shells.	× 600	354



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1 – 11. AMPHISTYLUS. 12. 13. SPONGOSTYLUS.

PLATE 18.

Legion SPUMELLARIA.

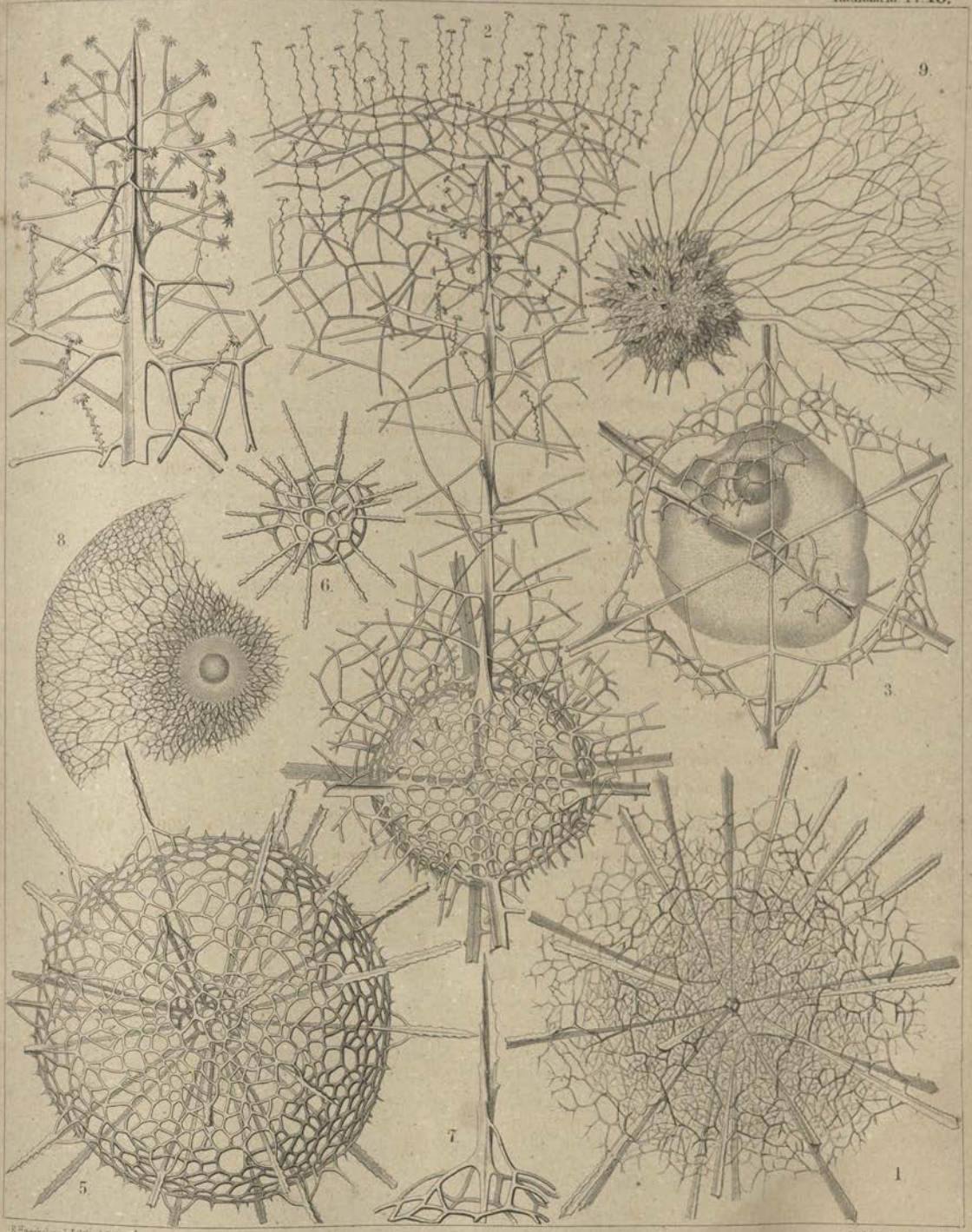
Order SPHÆROIDEA.

Families LIOSPHÆRIDA et ASTROSPHÆRIDA.

PLATE 18.

LIOSPHÆRIDA et ASTROSPI.....

		Diam.	Page
Fig. 1.	*Centrocubus cladostylus*, n. sp., ...	× 100	278
Fig. 2.	*Octodendron spathillatum*, n. sp., ...	× 300	280
	The entire inner shell, but a small part only of the outer shell is represented.		
Fig. 3.	*Octodendron cubocentron*, n. sp., ...	× 400	279
	The central capsule (somewhat irregular by compression ?) exhibits a large excentric nucleus (probably dislocated artificially ?).		
Fig. 4.	*Octodendron spathillatum*, n. sp., ...	× 800	280
	Free distal end of a radial spine, with the spathillæ on the end of the branches.		
Fig. 5.	*Rhizosphæra serrata*, n. sp., ...	× 300	284
Fig. 6.	*Rhizosphæra serrata*, n. sp., ...	× 300	284
	Medullary shell.		
Fig. 7.	*Rhizosphæra serrata*, n. sp., ...	× 600	284
	A single radial spine.		
Fig. 8.	*Plegmosphæra exodictyon*, n. sp., ...	× 200	89
	The central shell-cavity encloses the spherical central capsule and the concentric nucleus.		
Fig. 9.	*Spongodrymus elaphococcus*, n. sp., ...	× 150	272
	The entire inner shell, but only a small part of the outer spongy envelope is represented.		



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1.-4. CENTROCUBUS, 5-7. RHIZOSPHAERA, 8. PLEGMOSPHAERA, 9. SPONGODRYMUS.

PLATE 19.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 19.

STROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Drymosphæra polygonalis*, n. sp., ...	× 200	249
Fig. 2.	*Leptosphæra hexagonalis*, n. sp., ...	× 200	244

Showing the central capsule (forming numerous club-shaped protuberances) and the simple spherical nucleus in its centre. The skeleton is nearly the same as in *Diplosphæra hexagonalis* (fig. 3).

Fig. 3.	*Diplosphæra hexagonalis*, n. sp., ...	× 200	246

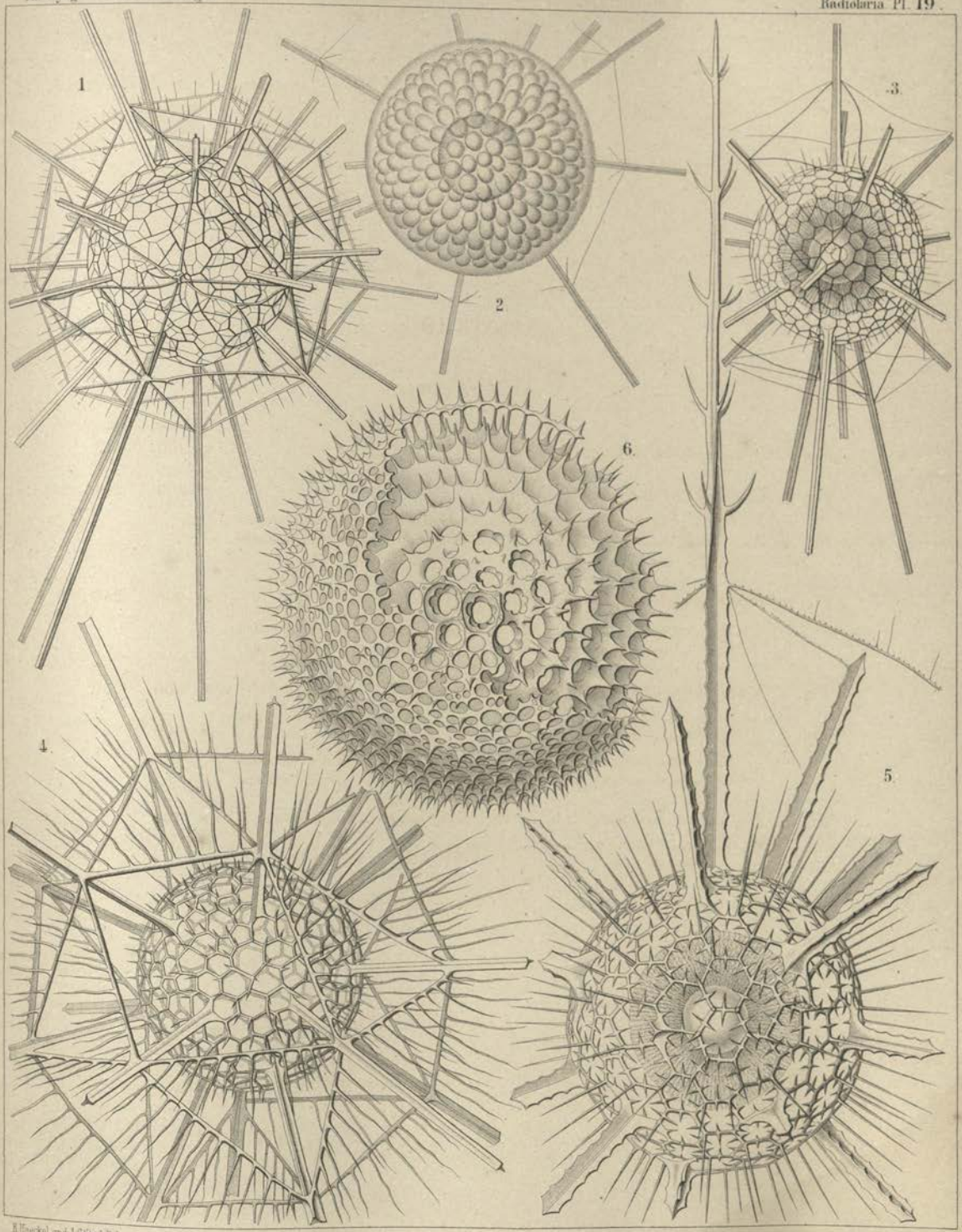
The spherical central capsule, with radially striped protoplasm, is enclosed in the inner shell, and exhibits in its centre the clear spherical nucleus.

Fig. 4.	*Astrosphæra hexagonalis*, n. sp., ...	× 300	250
Fig. 5.	*Astrosphæra stellata*, n. sp., ...	× 300	251

The central capsule, enclosed in the inner shell, exhibits a distinct radial striation of the protoplasm, and in the centre a clear spherical nucleus.

Fig. 6.	*Haliomma rhodococcus*, n. sp. (vel *Sethosphæra rhodococcus*), .	× 400	237

The greater part of the outer shell is removed.



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1-5. DIPLOSPHAERA, 6. SETHOSPHAERA.

PLATE 20.

Legion SPUMELLARIA.

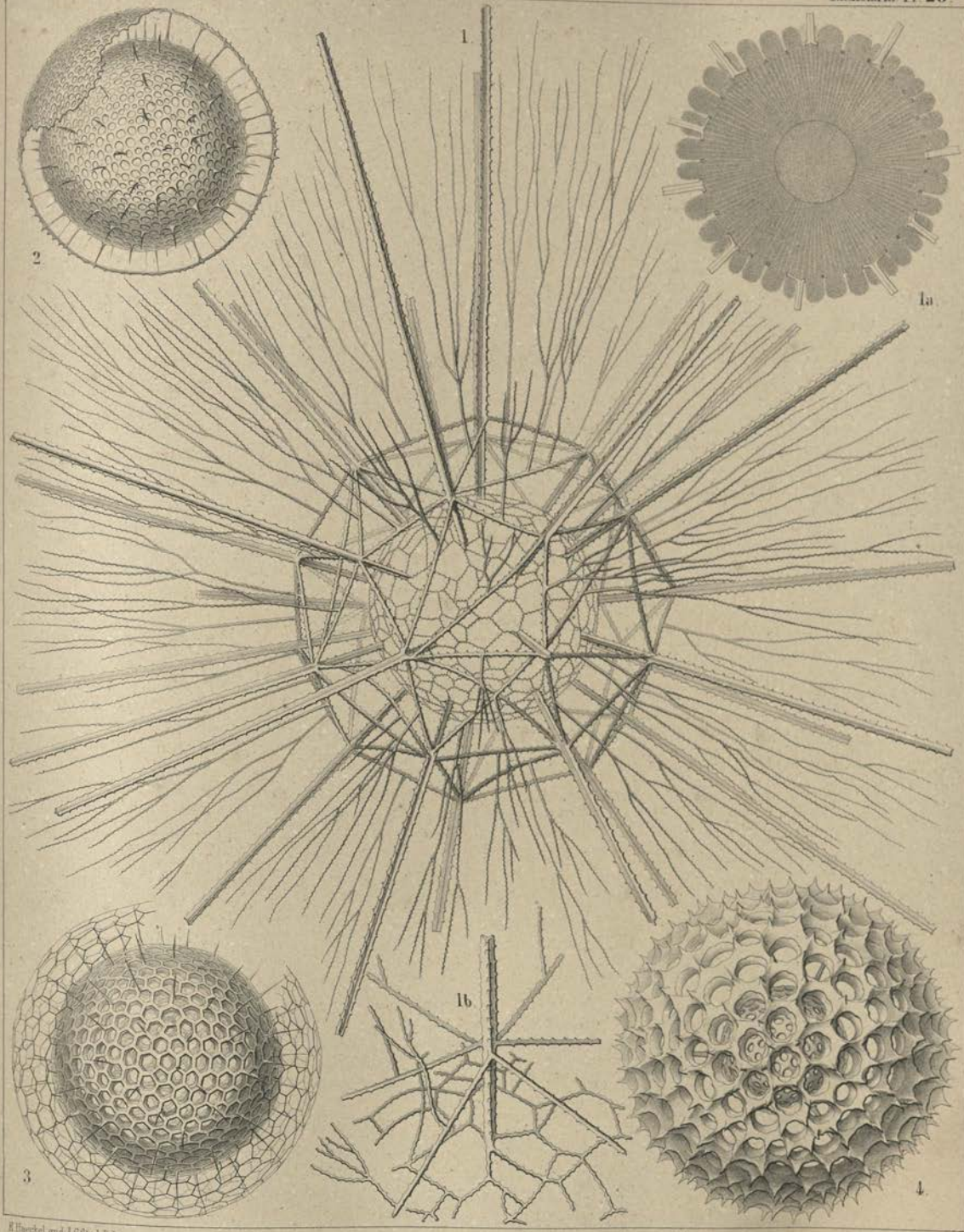
Order SPHÆROIDEA.

Families LIOSPHÆRIDA et ASTROSPHÆRIDA.

PLATE 20.

LIOSPHÆRIDA et ASTROSPHÆRIDA.

	Diam.	Page
Fig. 1. *Drymosphæra dendrophora*, n. sp., ...	× 300	249
Fig. 1*a*. Meridional section through the central capsule. In the centre the large spherical nucleus is visible. The protoplasm around it is distinctly radiate. From the central capsule arise numerous club-shaped apophyses or cæcal sacs, which are protruded through the meshes of the inner shell, ...	× 300	
Fig. 1*b*. Basal part of a single radial spine, and its connection with the network of the two shells, ...	× 400	
Fig. 2. *Liosphæra polypora*, n. sp., ...	× 300	78
The greater part of the outer shell is removed.		
Fig. 3. *Liosphæra hexagonia*. n. sp., ...	× 400	76
Fig. 4. *Carposphæra melitomma*, n. sp. (vel *Melitomma melittosphæra*),	× 400	73



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1. DRYMOSPHAERA. 2-4. MELITOMMA.

PLATE 21.

Legion SPUMELLARIA.

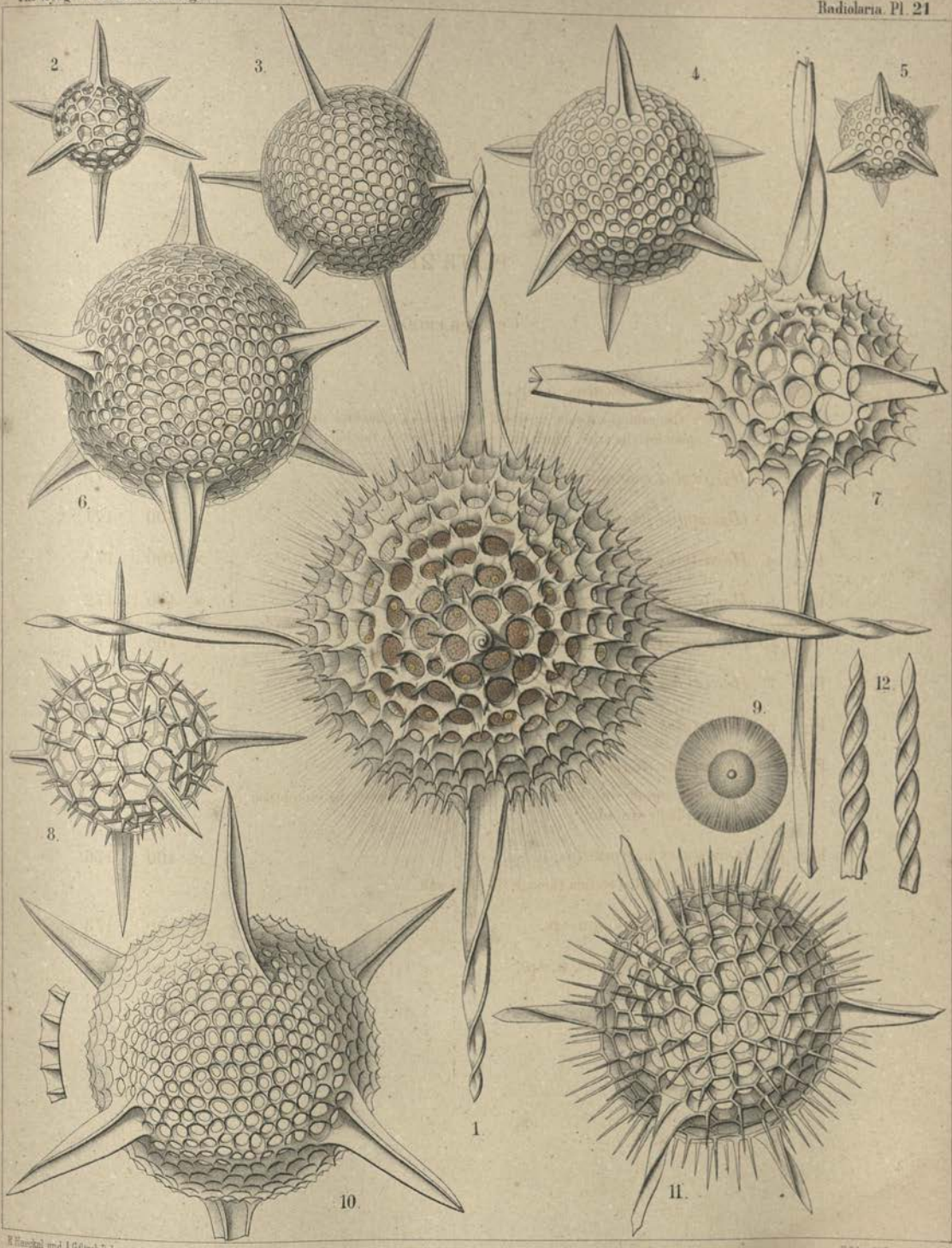
Order SPHÆROIDEA.

Family CUBOSPHÆRIDA.

PLATE 21.

CUBOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Hexastylus cochleatus*, n. sp.,	× 400	174
	From the central capsule, enclosed in the shell, numerous delicate radial pseudopodia arise, which are protruded through the pores of the shell.		
Fig. 2.	*Hexastylus triaxonius*, n. sp.,	× 400	175
Fig. 3.	*Hexastylus phænaxonius*, n. sp.,	× 300	171
Fig. 4.	*Hexastylus thaletis*, n. sp.,	× 400	172
Fig. 5.	*Hexastylus minimus*, n. sp.,	× 400	172
Fig. 6.	*Hexastylus dimensivus*, n. sp.,	× 400	175
Fig. 7.	*Hexastylus spiralis*, n. sp.,	× 400	177
Fig. 8.	*Hexastylus dictyotus*, n. sp.,	× 400	176
Fig. 9.	*Hexastylus dictyotus*, n. sp.,	× 400	176
	Central capsule with concentric nucleus and nucleolus; the protoplasm is radially striped.		
Fig. 10.	*Hexastylus marginatus*, n. sp.,	× 400	176
	Fig. 10*a*. Radial section through the shell-wall.		
Fig. 11.	*Hexastylus solonis*, n. sp.,	× 400	173
Fig. 12.	*Hexastylus contortus*, n. sp.,	× 300	177



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HEXASTYLUS.

PLATE 22.

Legion SPUMELLARIA.

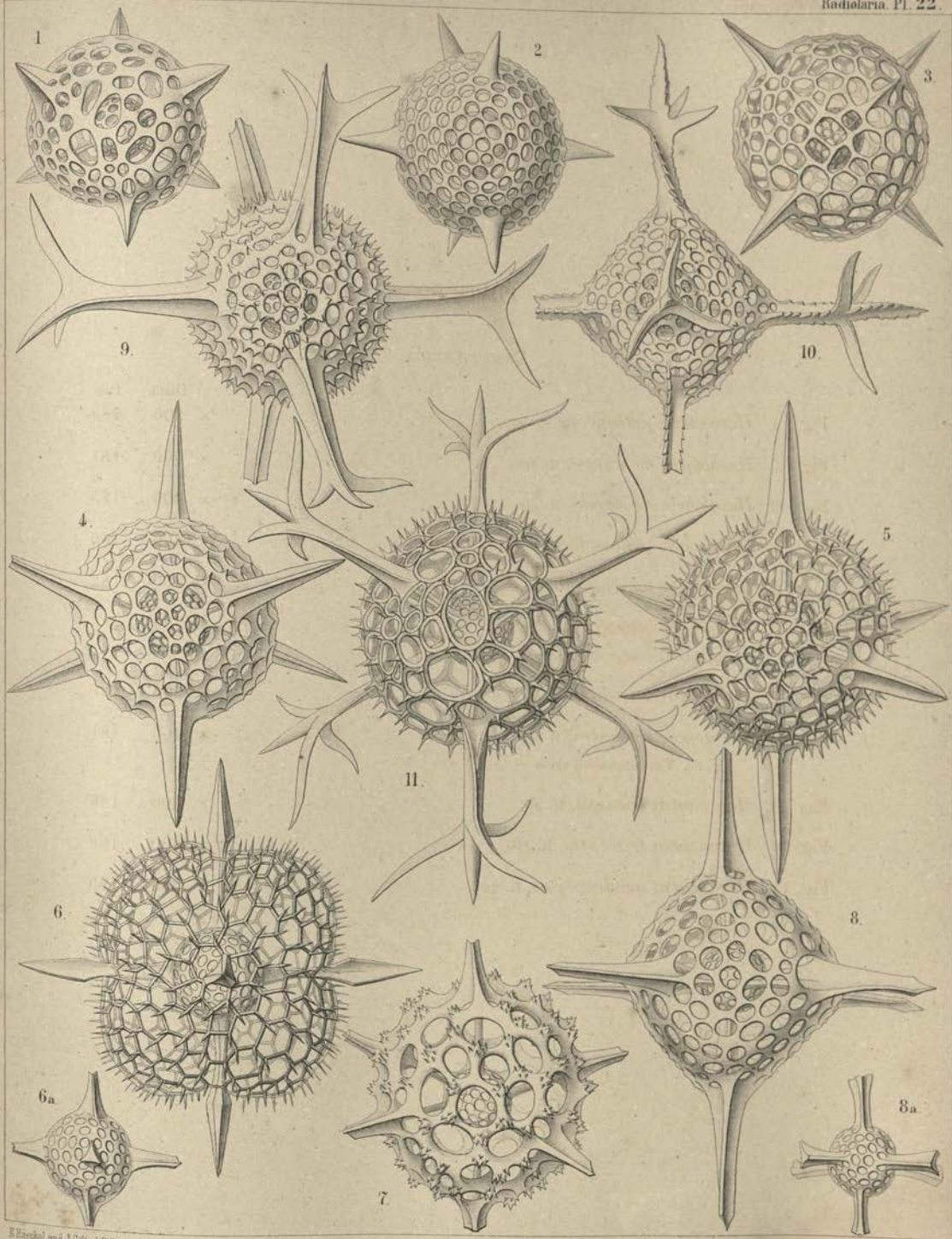
Order SPHÆROIDEA.

Family CUBOSPHÆRIDA.

PLATE 22.

CUBOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Hexalonche pythagoræa*, n. sp., ...	× 300	185
Fig. 2.	*Hexalonche conicornis*, n. sp., ...	× 300	181
Fig. 3.	*Hexalonche aristarchi*, n. sp., ...	× 400	185
Fig. 4.	*Hexalonche philosophica*, n. sp., ...	× 400	186
Fig. 5.	*Hexalonche anaximandri*, n. sp., ...	× 400	182
Fig. 6.	*Hexalonche octocolpa*, n. sp., ...	× 300	183
	Fig. 6*a*. The inner shell alone.		
Fig. 7.	*Hexalonche heracliti*, n. sp., ...	× 300	187
Fig. 8.	*Hexalonche octahedra*, n. sp., ...	× 400	181
	Fig. 8*a*. The inner shell alone.		
Fig. 9.	*Hexancistra tricuspis*, n. sp., ...	× 300	188
Fig. 10.	*Hexancistra triserrata*, n. sp., ...	× 300	188
Fig. 11.	*Hexancistra quadricuspsis*, n. sp., ...	× 300	189



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1–8. HEXALONCHE, 9–11. HEXANCISTRA.

PLATE 23.

Legion SPUMELLARIA.

Order SPHÆROIDEA

Family CUBOSPHÆRIDA.

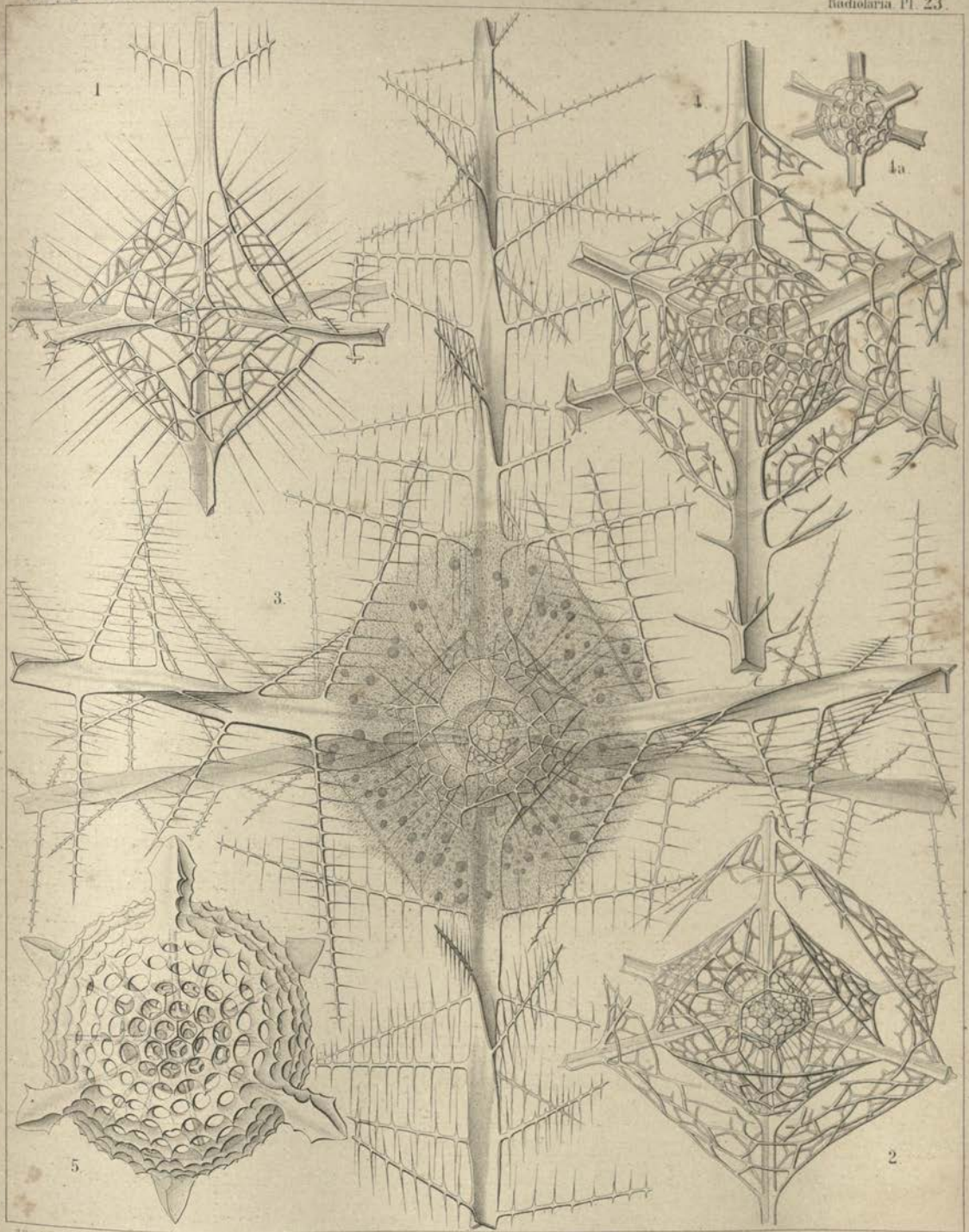
PLATE 23.

CUBOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Hexadendron bipinnatum*, n. sp.,	× 400	200
Fig. 2.	*Hexacromyum octahedrum*, n. sp.,	× 400	202
Fig. 3.	*Hexancistra mirabilis*, n. sp. (= *Hexapitys mirabilis*),	× 400	189

The spherical central capsule encloses the concentric spherical inner shell (which is filled up by the nucleus), and is surrounded by the octahedral outer shell. The latter is enveloped by the octahedral calymma, which is radially striated and contains numerous xanthellæ.

Fig. 4.	*Hexacaryum arborescens*, n. sp.,	× 400	203
Fig. 5.	*Hexacontium clavigerum*, n. sp.,	× 300	19



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1. 2. HEXADENDRUM, 3. HEXAPYTIS, 4. HEXACARYUM,
5. HEXACONTIUM.

PLATE 24.

Legion SPUMELLARIA.

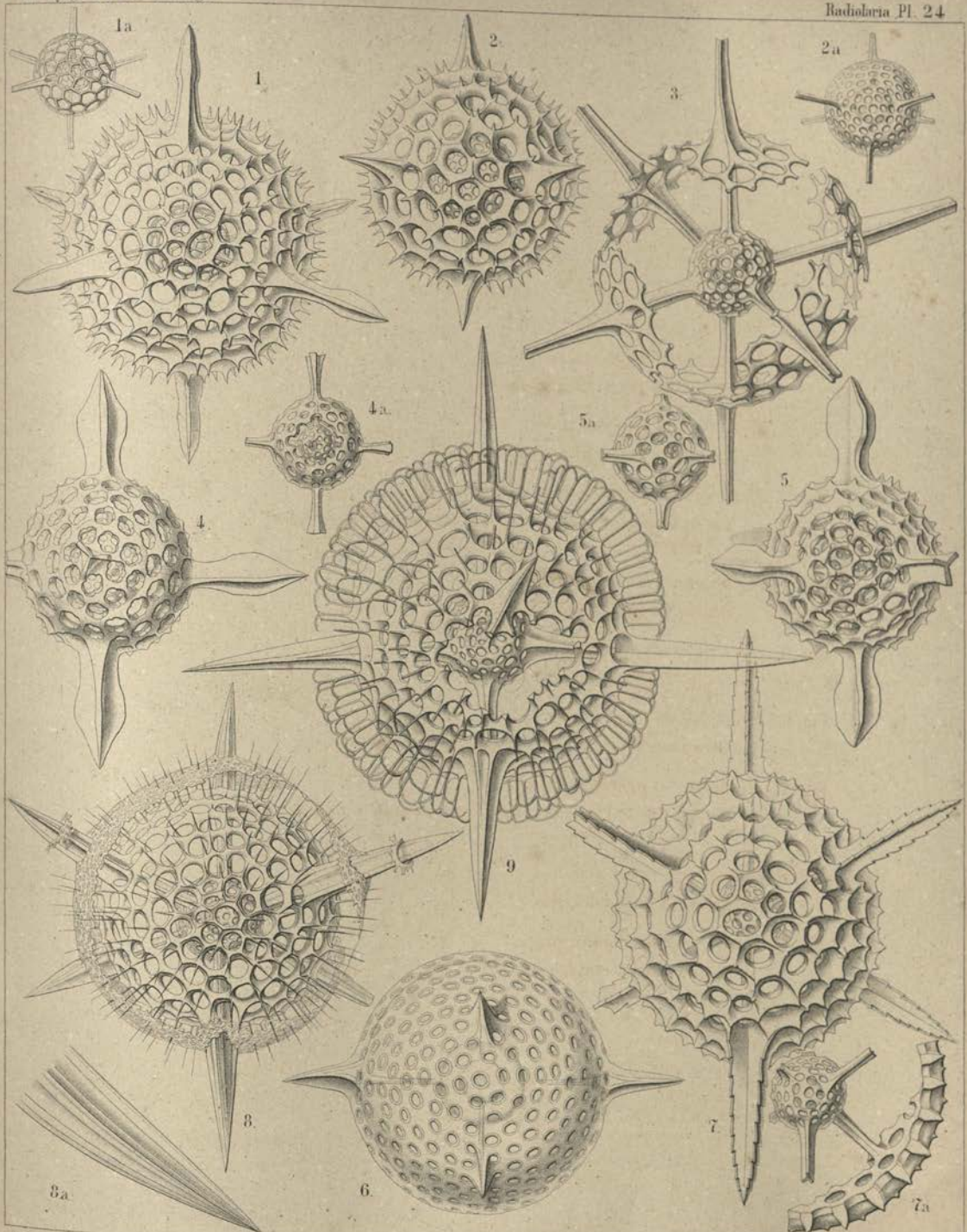
Order SPHÆROIDEA.

Family CUBOSPHÆRIDA.

PLATE 24.

CUBOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Hexacontium sceptrum*, n. sp.,	× 400	194
	Fig. 1*a*. The two medullary shells.		
Fig. 2.	*Hexacontium favosum*, n. sp.,	× 400	194
	Fig. 2*a*. The two medullary shells.		
Fig. 3.	*Hexacontium axotrias*, n. sp.,	× 300	192
	The six lattice-plates, which form the cortical shell, are not yet fully developed.		
Fig. 4.	*Hexacontium floridum*, n. sp.,	× 300	195
	Fig. 4*a*. The two medullary shells.		
Fig. 5.	*Hexacontium papillosum*, n. sp.,	× 400	197
	Fig. 5*a*. The two medullary shells.		
Fig. 6.	*Hexacontium lævigatum*, n. sp.,	× 400	193
	The contours of the two medullary shells are visible in the centre.		
Fig. 7.	*Hexacontium prionacanthum*, n. sp.	× 400	195
	Fig. 7*a*. The two medullary shells, connected with a fragment of the cortical shell.		
Fig. 8.	*Cubosphæra cubaxonia*, n. sp.,	× 400	203
	Fig. 8*a*. A single radial spine.		
Fig. 9.	*Hexacromyum elegans*, n. sp.,	× 400	201
	A part of the two cortical shells is broken off.		



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1-7. HEXACONTIUM, 8.9. HEXACROMYUM.

PLATE 25.

Legion SPUMELLARIA.

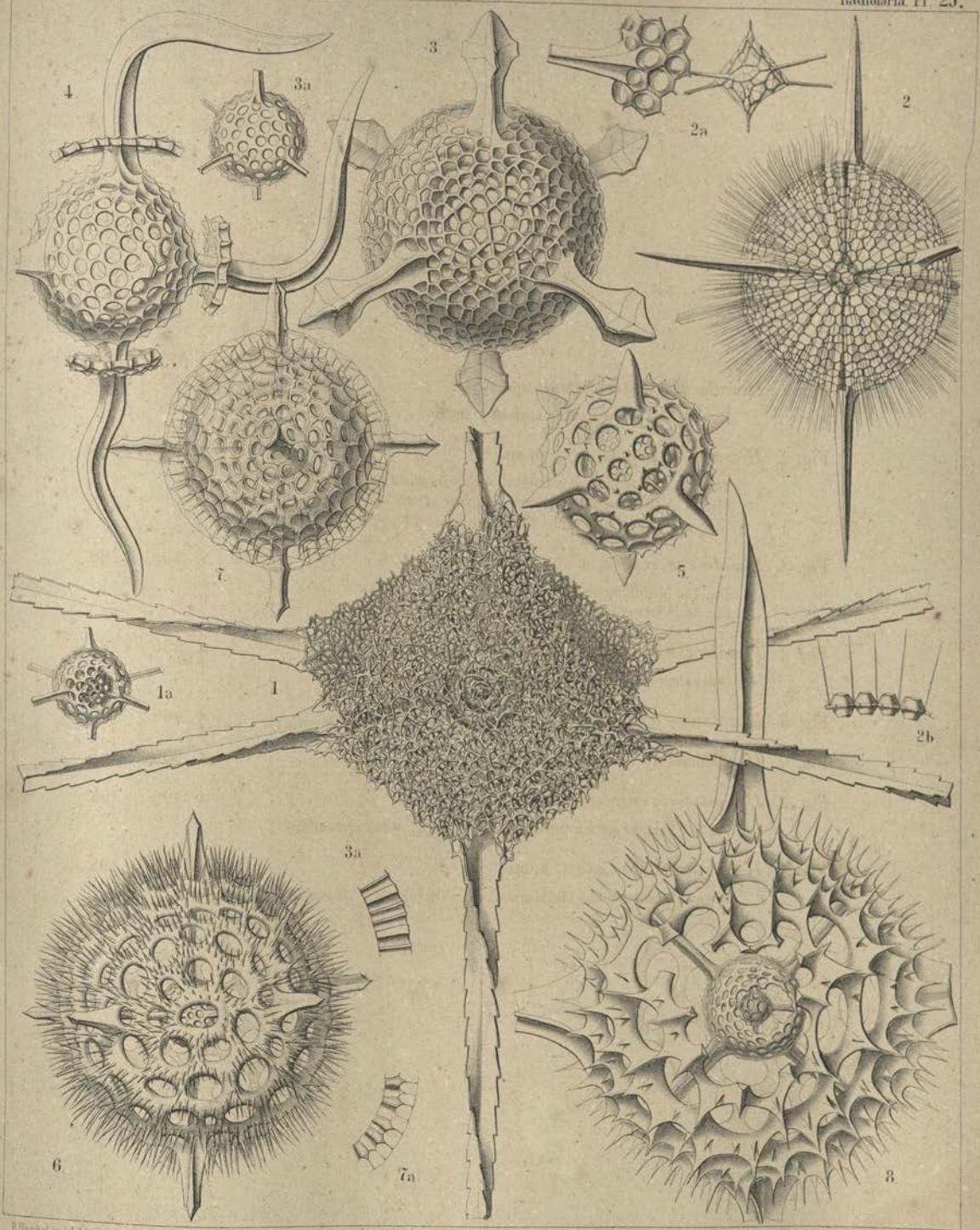
Order SPHÆROIDEA.

Family CUBOSPHÆRIDA.

PLATE 25.

CUBOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Hexadoridium streptacanthum*, n. sp., ...	× 400	206
	Fig. 1*a*. The two concentric medullary shells.		
Fig. 2.	*Hexalonche amphisiphon*, n. sp., ...	× 300	182
	Fig. 2*a*. Medullary shell connected with a fragment of the cortical shell.		
	Fig. 2*b*. Vertical section through the wall of the cortical shell. (Below the centre of the Plate, also lettered 3*a* by mistake.)		
Fig. 3.	*Hexalonche rosetta*, n. sp., ...	× 400	180
	Fig. 3*a*. Medullary shell.		
	Fig. 3*b*. Vertical section through the wall of the cortical shell.		
Fig. 4.	*Hexalonche curvicornis*, n. sp., ...	× 300	181
	Outer shell not yet complete, or partly broken off (?).		
Fig. 5.	*Hexalonche anaximenis*, n. sp., ...	× 400	183
Fig. 6.	*Hexalonche hystricina*, n. sp., ...	× 300	187
Fig. 7.	*Hexacontium circumtextum*, n. sp., ...	× 400	193
	Fig 7*a*. Vertical section through the double wall of the cortical shell.		
Fig. 8.	*Hexacontium gladiatum*, n. sp., ...	× 400	198
	A part of the two outer shells and of the radial spines is broken off.		



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1. HEXADORAS, 2-6. HEXALONCHE, 7.8. HEXACONTIUM.

PLATE 26.

Legion SPUMELLARIA.

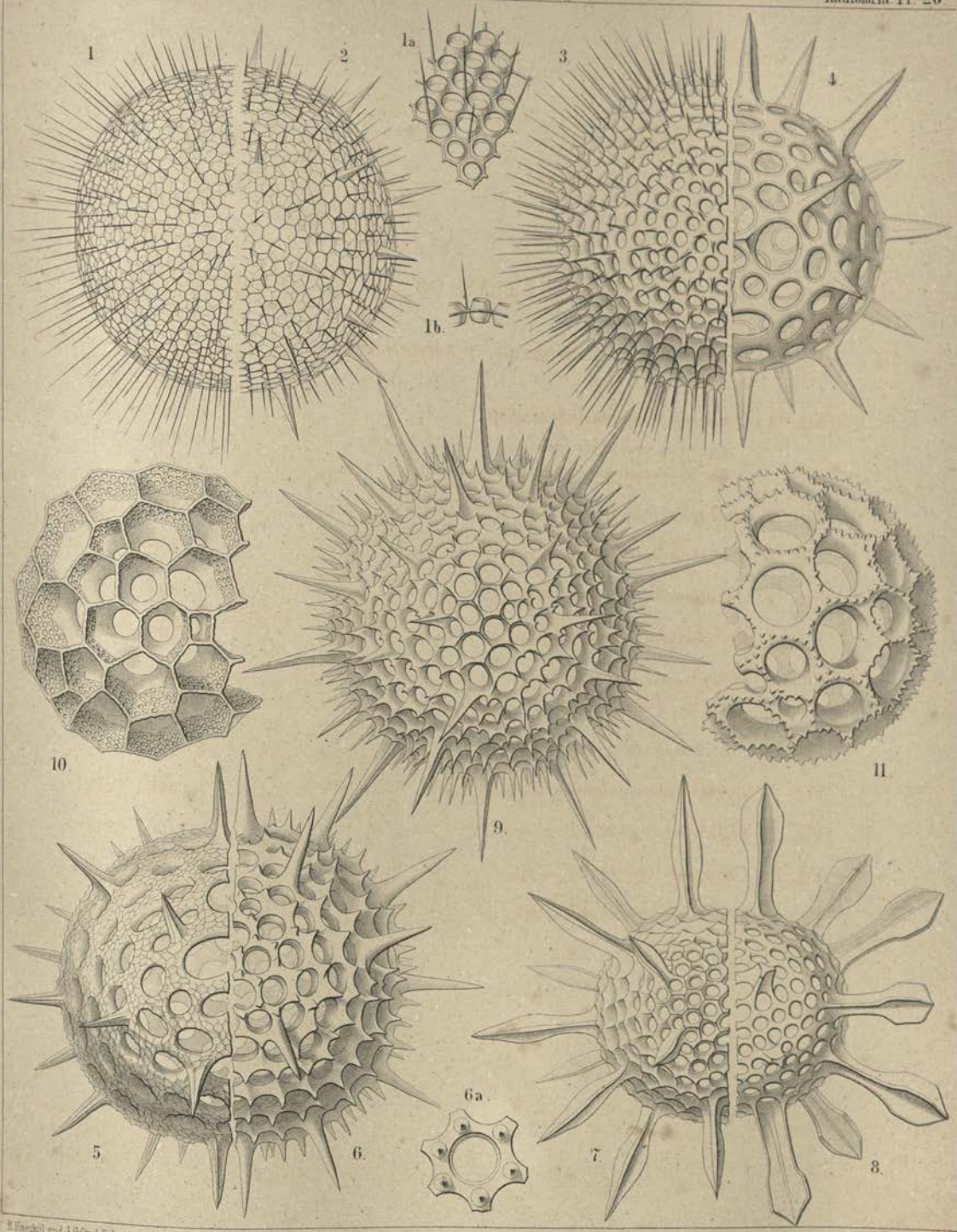
Order SPHÆROIDEA.

Families LIOSPHÆRIDA et ASTROSPHÆRIDA.

PLATE 26.

LIOSPHÆRIDA et ASTROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Coscinomma amphisiphon*, n. sp.,	× 300	222
	Fig. 1*a*. A piece of the lattice-shell,	× 600	
	Fig. 1*b*. Vertical section through the shell-wall,	× 600	
Fig. 2.	*Heliosphæra hexagonaria*, n. sp.,	× 300	217
Fig. 3.	*Acanthosphæra castanea*, n. sp.,	× 400	211
Fig. 4.	*Acanthosphæra angulata*, n. sp.,	× 300	216
Fig. 5.	*Acanthosphæra reticulata*, n. sp.,	× 300	217
Fig. 6.	*Heliosphæra coronata*, n. sp.,	× 400	219
	Fig. 6*a*. A single pore with its coronal,	× 300	
Fig. 7.	*Acanthosphæra mucronata*, n. sp.,	× 400	212
Fig. 8.	*Acanthosphæra clavata*, n. sp.,	× 400	212
Fig. 9.	*Heliosphæra pectinata*, n. sp.,	× 400	218
Fig. 10.	*Cenosphæra perforata*, n. sp.,	× 400	66
Fig. 11.	*Cenosphæra coronata*, n. sp.,	× 400	67



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1. 2. HELIOSPHAERA. 3.–9. ACANTHOSPHAERA. 10. 11. CERIOSPHAERA.

PLATE 27.

Legion SPUMELLARIA

Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

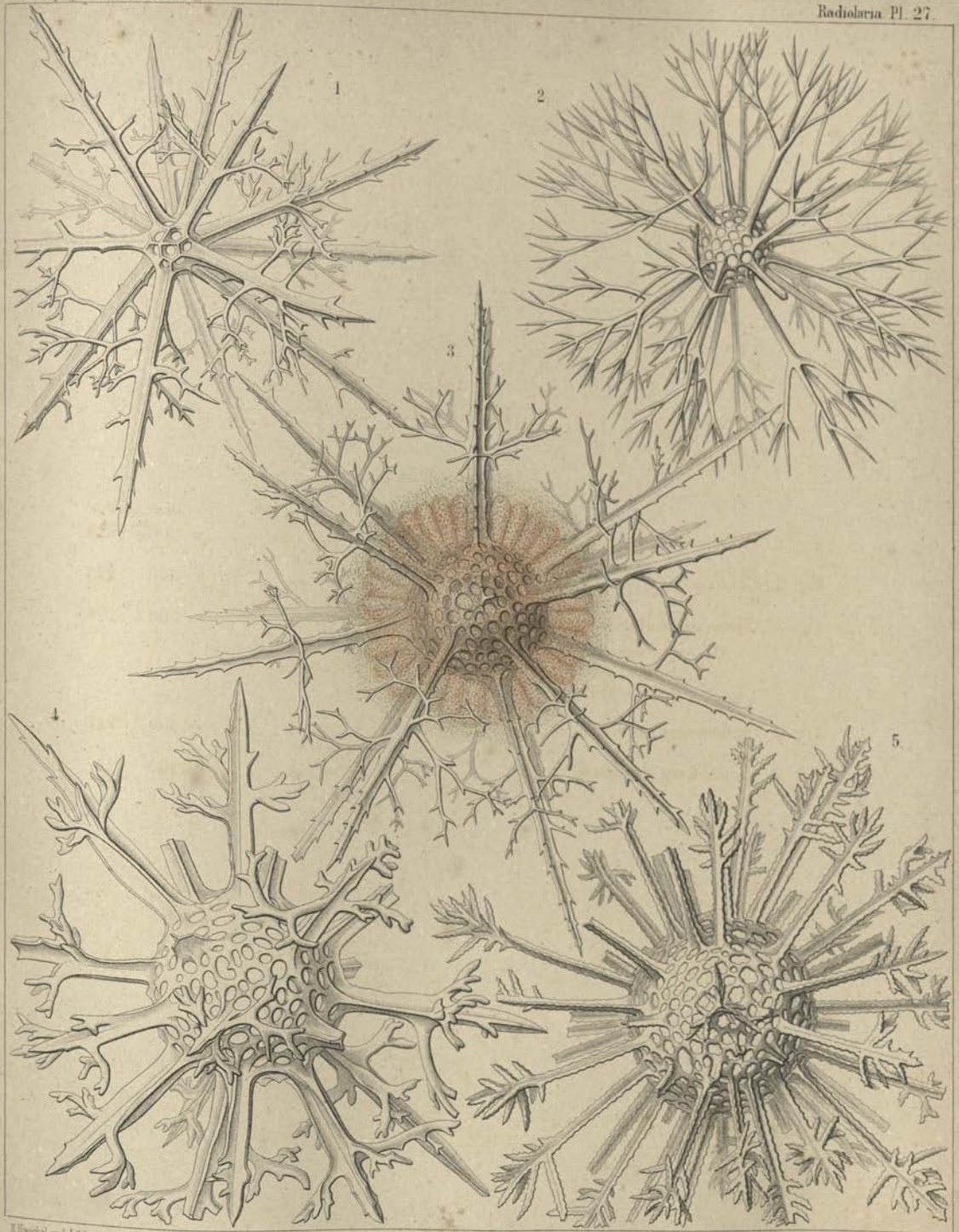
PLATE 27.

ASTROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Cladococcus pinetum*, n. sp., ...	× 300	226
Fig. 2.	*Cladococcus scoparius*, n. sp., ...	× 300	225
Fig. 3.	*Cladococcus abietinus*, n. sp., ...	× 300	226

The central capsule, enclosed originally in the shell, sends out numerous club-shaped apophyses through the pores of the lattice-sphere. The central spherical nucleus fills up half the shell-cavity.

Fig. 4.	*Cladococcus stalactites*, n. sp., ...	× 300	227
Fig. 5.	*Cladococcus dendrites*, n. sp., ...	× 200	227



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CLADOCOCCUS.

PLATE 28.

Legion SPUMELLARIA.

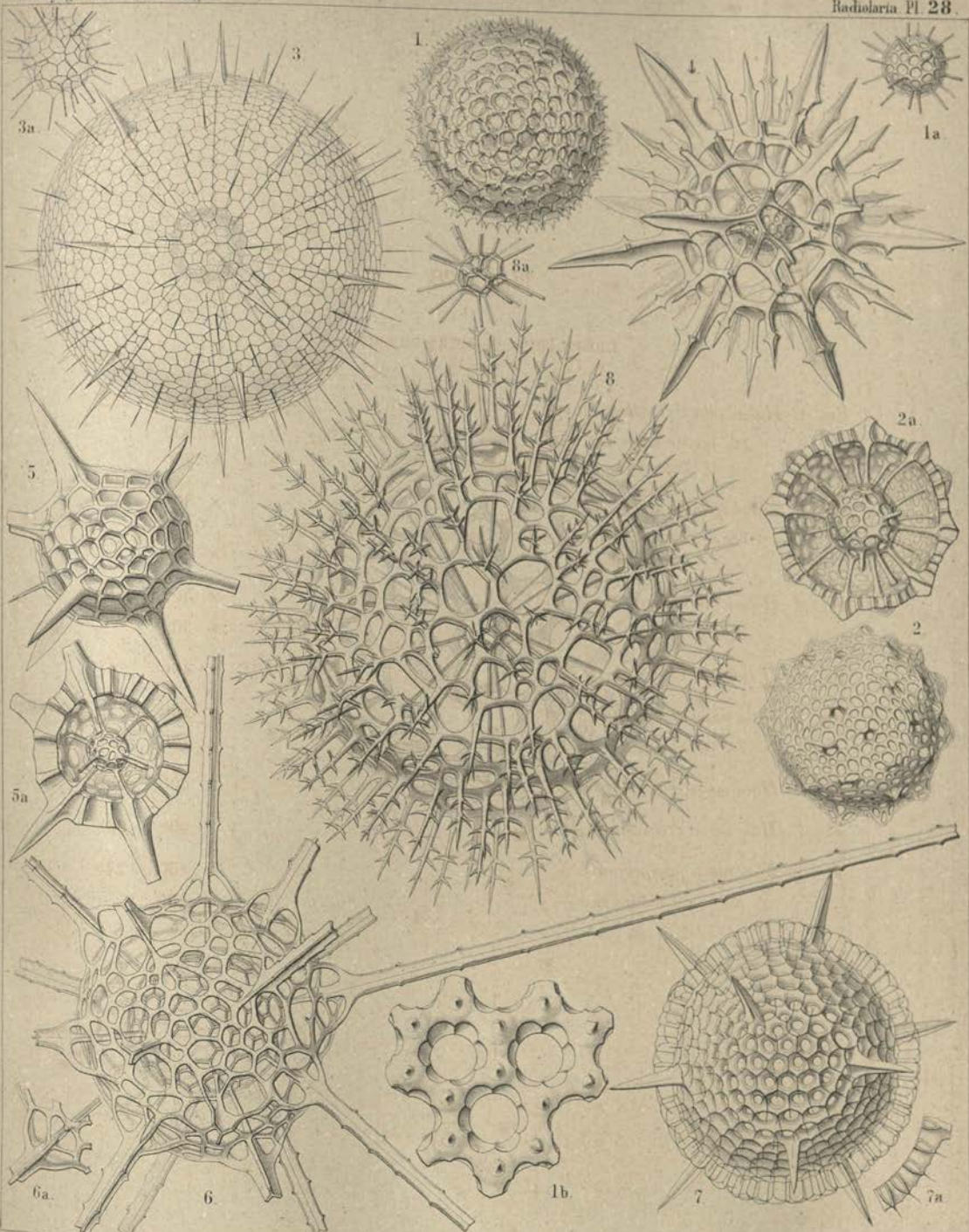
Order SPHÆROIDEA.

Families LIOSPHÆRIDA et ASTROSPHÆRIDA.

PLATE 28.

LIOSPHÆRIDA et ASTROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Haliomma lirianthus*, n. sp.,	× 300	232
	Fig. 1*a*. Medullary shell,	× 300	
	Fig. 1*b*. Three pores of the cortical shell,	× 900	
Fig. 2.	*Carposphæra nodosa*, n. sp.,	× 300	76
	Fig. 2*a*. The medullary shell is visible, the upper half of the cortical shell being taken off,	× 300	
Fig. 3.	*Heliosoma radians*, n. sp.,	× 300	240
	Fig. 3*a*. Medullary shell,	× 300	
Fig. 4.	*Heliosoma hastatum*, n. sp.,	× 400	241
Fig. 5.	*Haliomma compactum*, n. sp.,	× 400	239
	Fig. 5*a*. The upper half of the cortical shell is removed,	× 300	
Fig. 6.	*Haliomma macrodoras*, n. sp.,	× 400	238
Fig. 7.	*Haliomma circumtextum*, n sp.,	× 400	233
Fig. 8.	*Elatomma juniperinum*, n. sp.,	× 400	243
	Fig. 8*a*. Medullary shell,	× 400	



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1. 2. ANTHOMMA. 3. HELIOSOMA. 4.–7. HALIOMMA.
8. ELATOMMA.

PLATE 29.

Legion SPUMELLARIA.

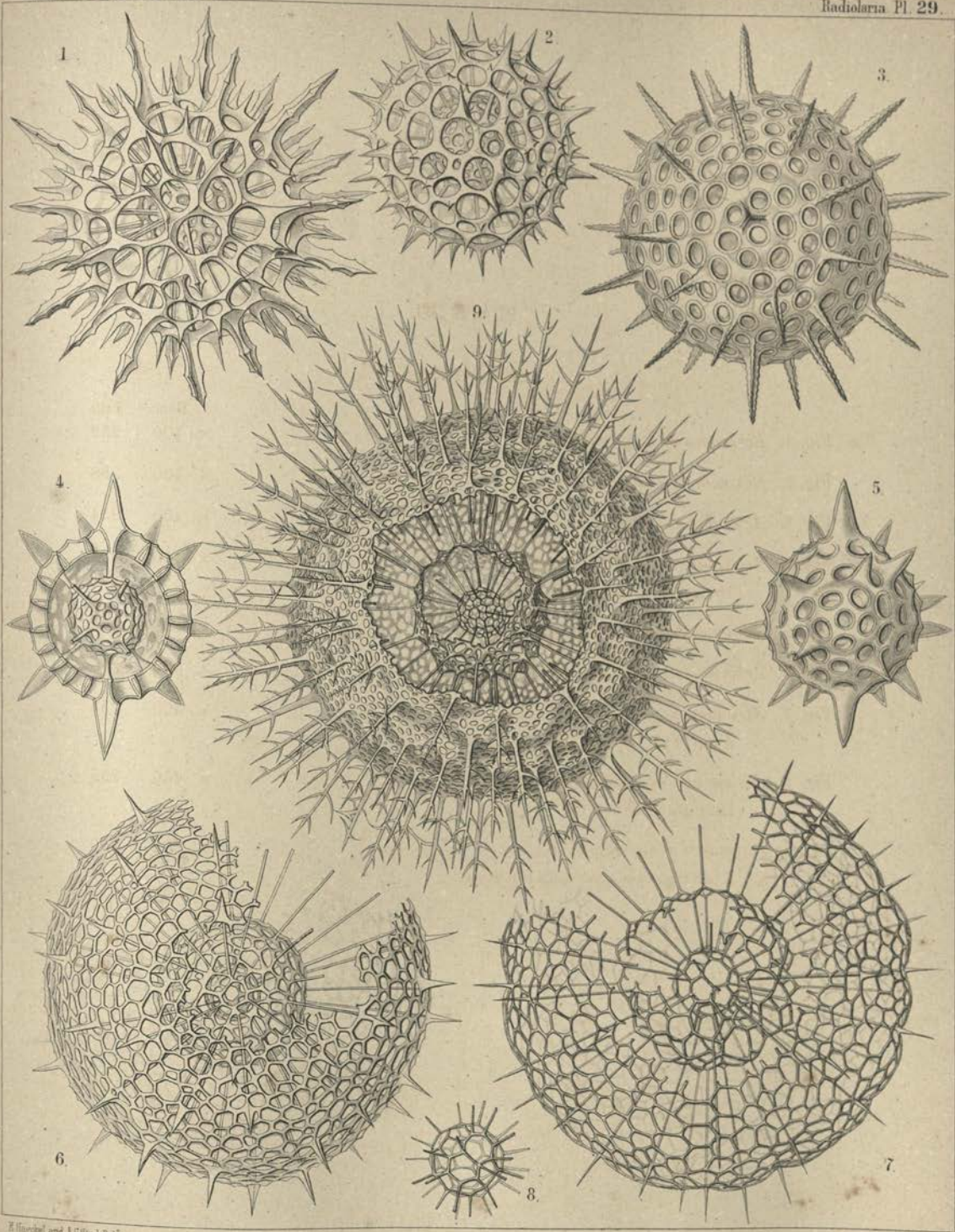
Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 29.

ASTROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Echinomma toxopneustes*, n. sp.,	× 400	259
Fig. 2.	*Echinomma sphærechinus*, n. sp.,	× 400	258
Fig. 3.	*Actinomma denticulatum*, n. sp.,	× 400	254
Fig. 4	*Actinomma pachyderma*, n. sp., The half of the cortical shell is removed.	× 400	254
Fig. 5.	*Actinomma pachyderma*, n. sp.,	× 400	254
Fig. 6.	*Actinomma capillaceum*, n. sp.,	× 300	255
Fig. 7.	*Actinomma arcadophorum*, n. sp., A part of the two outer shells is removed.	× 400	255
Fig. 8.	*Actinomma arcadophorum*, n. sp., Inner medullary shell.	× 400	255
Fig. 9.	*Pityomma drymodes*, n. sp., A part of the two outer shells is removed.	× 300	260



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1–3. ACTINOMMA. 9. PITYOMMA.

PLATE 30.

Legion SPUMELLARIA.

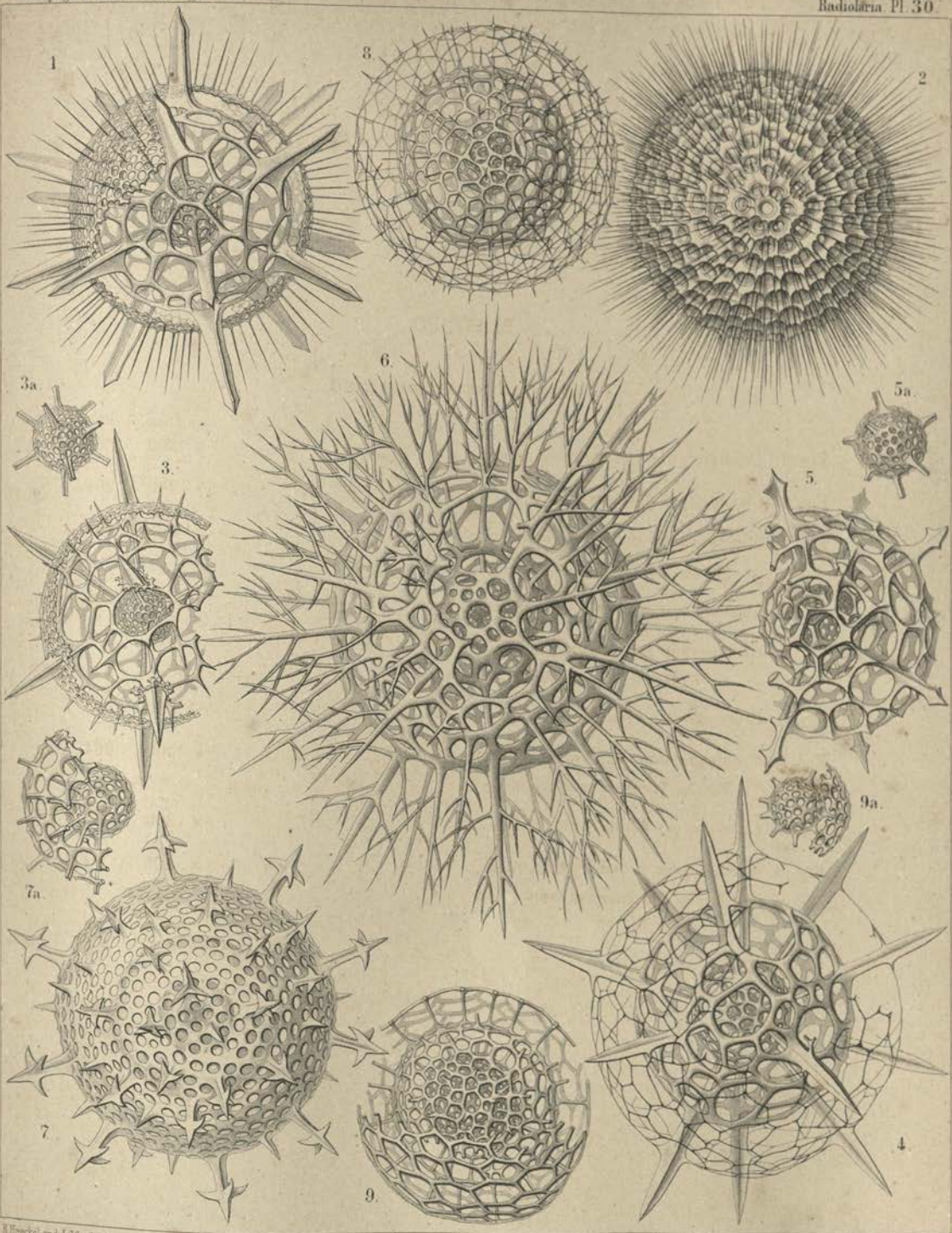
Order SPHÆROIDEA.

Families LIOSPHÆRIDA et ASTROSPHÆRIDA.

PLATE 30.

LIOSPHÆRIDA et ASTROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Cromyechinus icosacanthus*, n. sp.,	× 300	263
Fig. 2.	*Cromyomma villosum*, n. sp.,	× 300	261
Fig. 3.	*Cromyechinus dodecacanthus*, n. sp.,	× 400	264
	Fig. 3*a*. The innermost shells.		
Fig. 4.	*Cromyomma circumtextum*, n. sp.,	× 300	262
Fig. 5.	*Cromyomma mucronatum*, n. sp.,	× 200	263
	Fig. 5*a*. The innermost shells.		
Fig. 6.	*Cromyodrymus abietinus*, n. sp.,	× 300	265
Fig. 7.	*Cromyodrymus quadricuspis*, n. sp.,	× 400	264
	Fig. 7*a*. The inner concentric shells.		
Fig. 8.	*Cromyomma perspicuum*, n. sp.,	× 300	262
Fig. 9.	*Cromyosphæra quadruplex*, n. sp.,	× 300	84
	Fig. 9*a*. The innermost shells.		



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1–5. CROMYOMMA. 6.7. CROMYODRYMUS. 8.9. CROMYOSPHAERA.

PLATE 31.

Legion SPUMELLARIA.

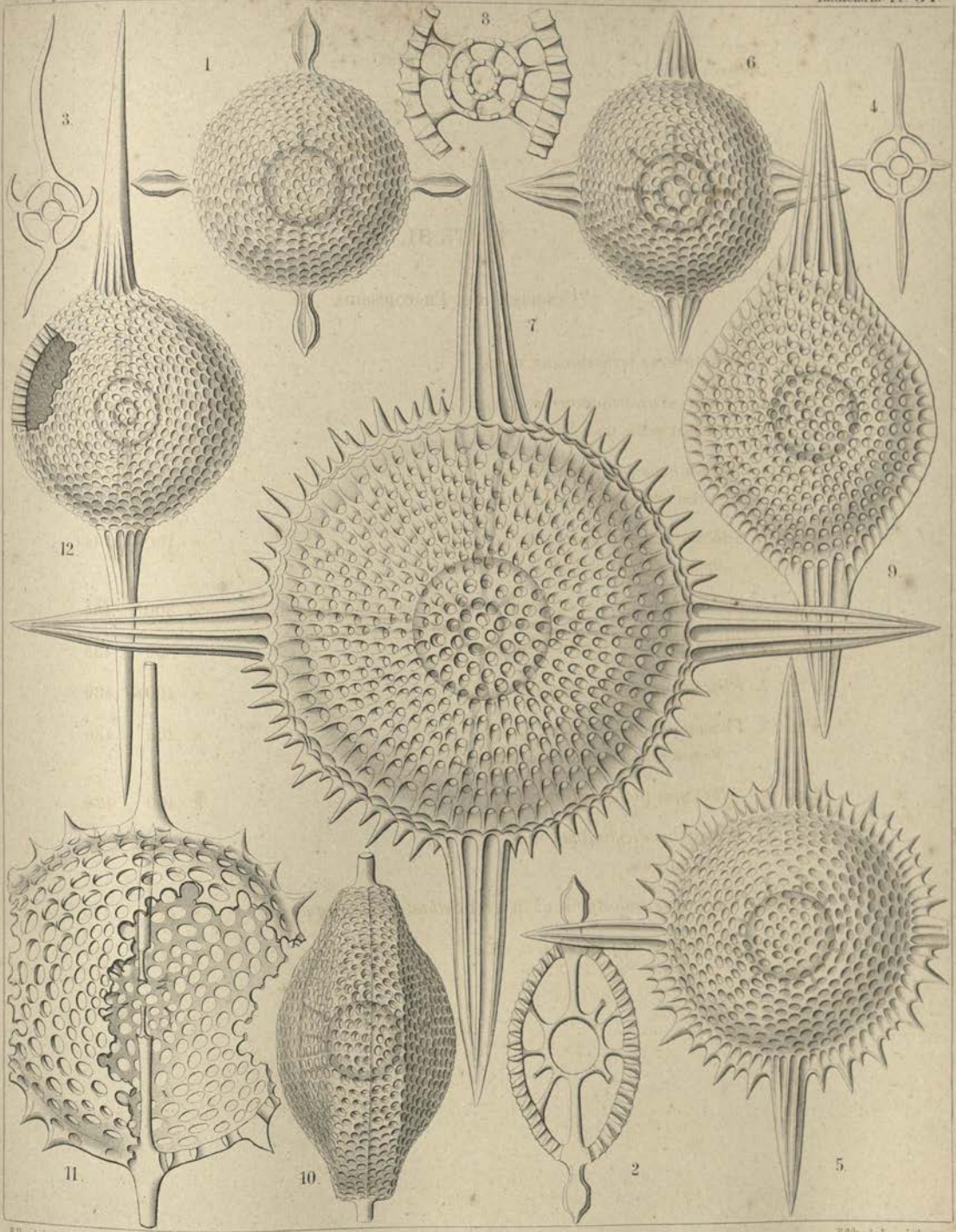
Order DISCOIDEA.

Families CENODISCIDA et PHACODISCIDA.

PLATE 31.

CENODISCIDA et PHACODISCIDA.

		Diam.	Page
Fig. 1.	*Sethostaurus orthostaurus*, n. sp.,	× 300	433
Fig. 2.	*Sethostaurus orthostaurus*, n. sp., Vertical section through the centrum.	× 300	433
Fig. 3.	*Sethostaurus recurvatus*, n. sp., Optical section through the equatorial plane.	× 100	434
Fig. 4.	*Sethostaurus rhombostaurus*, n. sp., Optical section through the equatorial plane.	× 100	434
Fig. 5.	*Sethostaurus cruciatus*, n. sp. (vel *Heliostaurus cruciatus*),	× 300	434
Fig. 6.	*Phacostaurus oceanidum*, n. sp.,	× 300	435
Fig. 7.	*Phacostaurus magnificus*, n. sp.,	× 400	436
Fig. 8.	*Phacostaurus magnificus*, n. sp., Vertical section through the centrum.	× 200	436
Fig. 9.	*Sethostylus dictyliscus*, n. sp.,	× 400	428
Fig. 10.	*Sethostylus dicylindrus*, n. sp., Marginal view.	× 300	428
Fig. 11.	*Stylodiscus endostylus*, n. sp. (vel *Sethostylus endostylus*),	× 300	413
Fig. 12.	*Phacostylus amphistylus*, n. sp.,	× 300	430



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1-4. SETHOSTAURUS, 5. HELIOSTAURUS, 6. PHACOSTAURUS,
7. 8. ASTROSTAURUS, 9-11. SETHOSTYLUS, 12. PHACOSTYLUS.

PLATE 32.

Legion SPUMELLARIA.

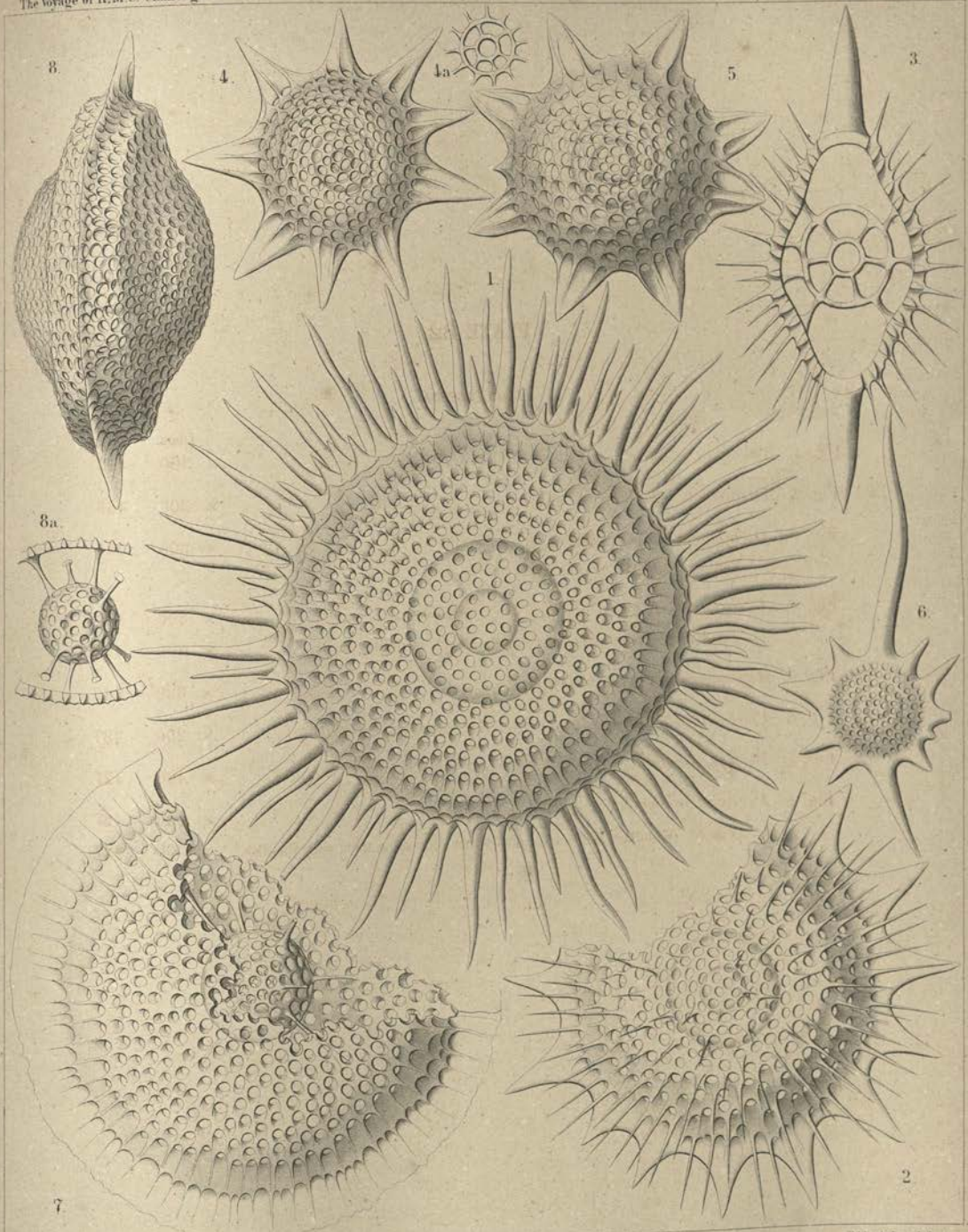
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 32.

PHACODISCIDA.

	Diam.	Page
Fig. 1. *Astrophacus solaris*, n. sp.,	× 300	453
Fig. 2. *Astrophacus apollinis*, n. sp.,	× 300	455
Fig. 3. *Astrophacus phacodiscus*, n. sp.,	× 300	454
Vertical section through the centrum.		
Fig. 4. *Astrosestrum ephyra*, n. sp.,	× 300	442
Fig. 4*a*. Transverse section through the double medullary shell,	× 300	442
Fig. 5. *Astrosestrum nauphanta*, n. sp.,	× 300	442
Fig. 6. *Phacostylus caudatus*, n. sp. (vel *Astrosestrum caudatum*),	× 200	431
Fig. 7. *Perizona scutella*, n. sp.,	× 400	427
Fig. 8. *Perizona pterygota*, n. sp.,	× 400	427
Fig. 8*a*. Medullary shells and radial beams connecting them with the disk,	× 300	427



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1-3. ASTROPHACUS. 4-6. ASTROSESTRUM. 7-8. PERIZONA.

PLATE 33.

Legion SPUMELLARIA.

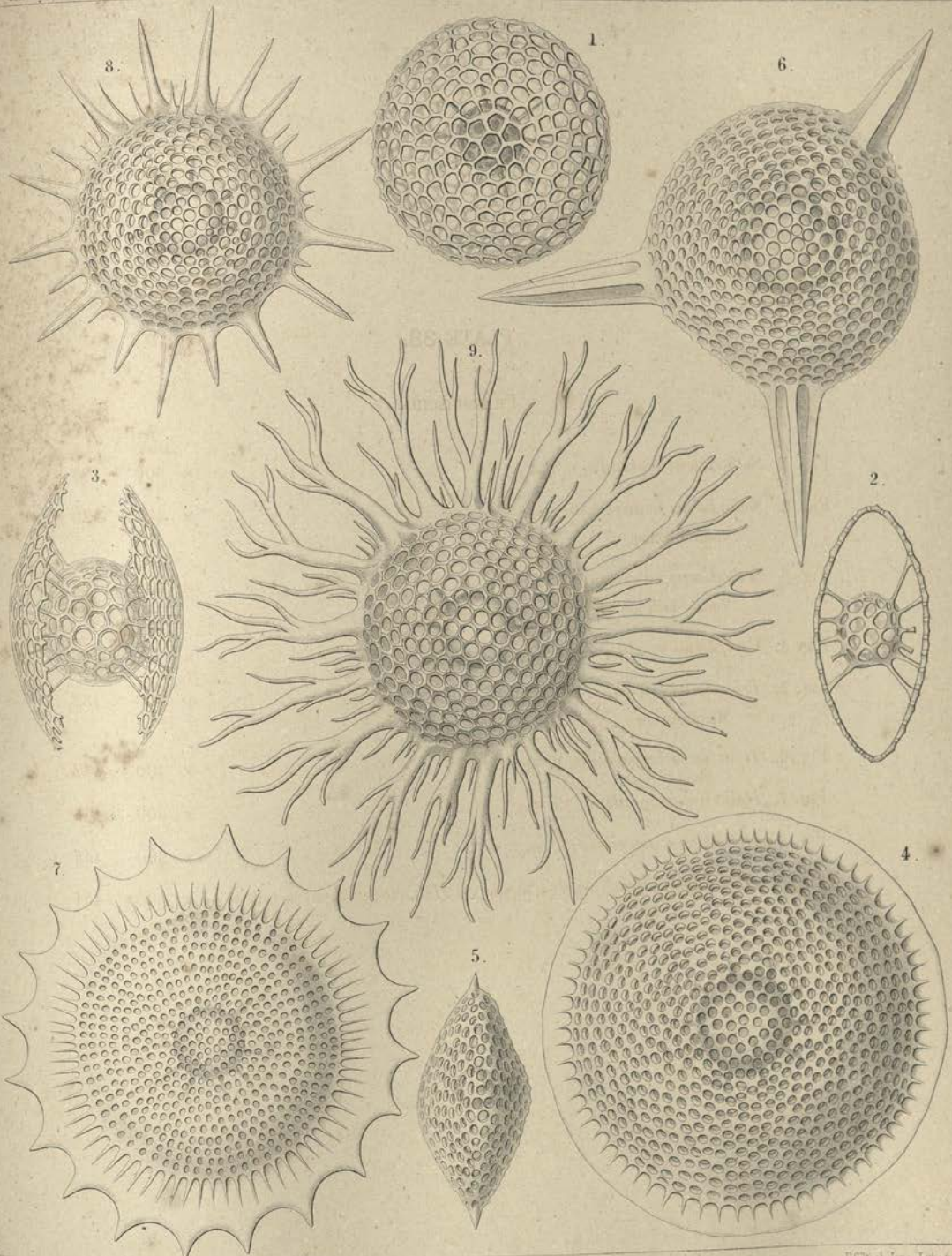
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 33.

PHACODISCIDA.

		Diam.	Page
Fig. 1.	*Sethodiscus lenticula*, n. sp.,	× 300	423
Fig. 2.	*Sethodiscus lenticula*, n. sp., Vertical section.	× 300	423
Fig. 3.	*Sethodiscus macrococcus*, n. sp., Young shell, not yet closed, seen from the margin.	× 300	423
Fig. 4.	*Periphæna cincta*, n. sp.,	× 400	426
Fig. 5.	*Triactiscus tricuspis*, n. sp., Marginal view.	× 300	432
Fig. 6.	*Triactiscus trippyramis*, n. sp.,	× 400	432
Fig. 7.	*Heliodiscus cingillum*, n. sp.,	× 300	448
Fig. 8.	*Heliodiscus asteriscus*, n. sp.,	× 300	445
Fig. 9.	*Heliodrymus dendrocyclus*, n. sp. (vel *Heliocladus dendrocyclus*),	× 300	451



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1–3. SETHODISCUS. 4. PERIPHAENA. 5.6. TRIACTIS.
7.8. HELIODISCUS. 9. HELIOCLADUS.

PLATE 34.

Legion SPUMELLARIA.

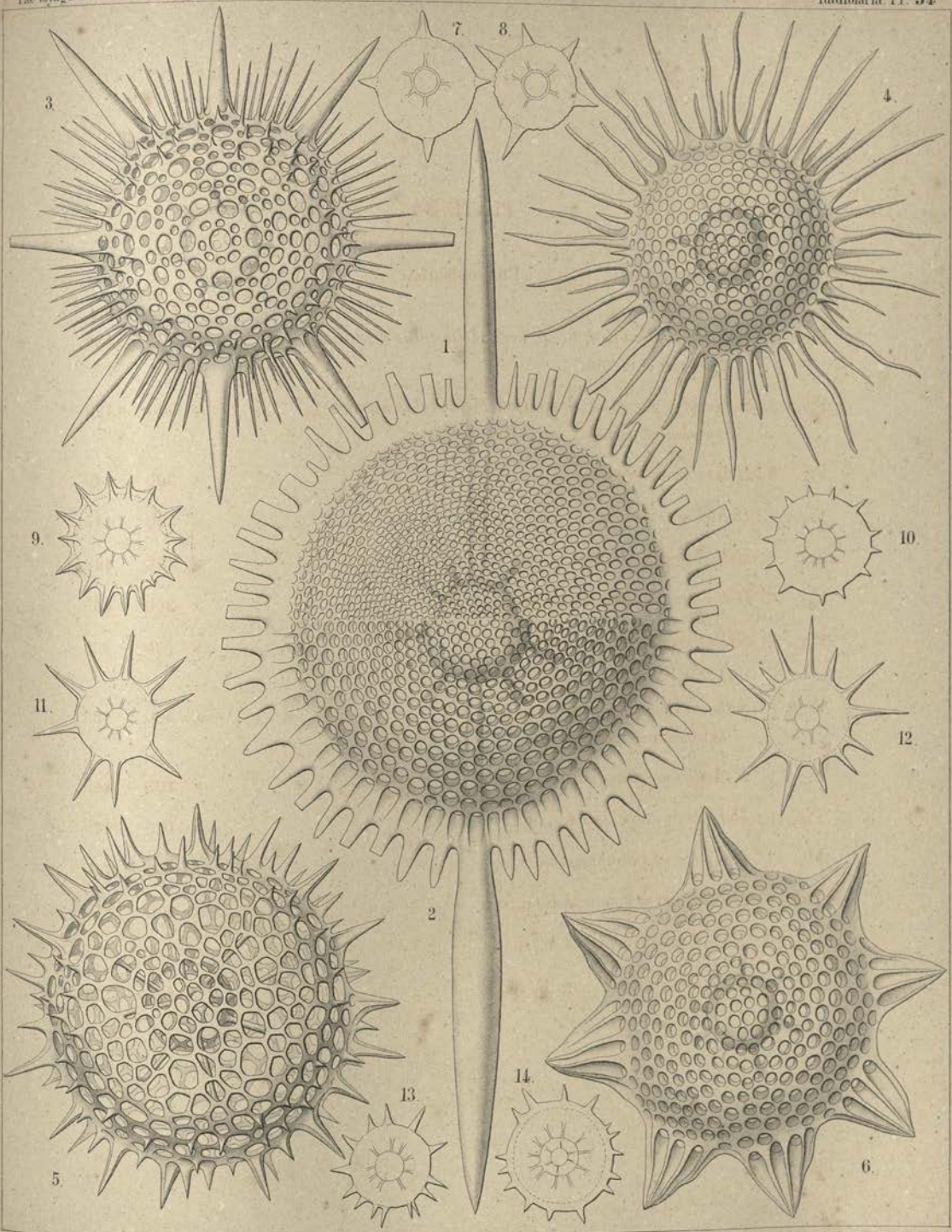
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 34.

PHACODISCIDA.

		Diam.	Page
Fig. 1.	*Sethostylus dentatus*, n. sp. (vel *Heliostylus dentatus*), Upper half of the disk.	× 300	429
Fig. 2.	*Sethostylus serratus*, n. sp. (vel *Heliostylus serratus*), Lower half of the disk.	× 300	429
Fig. 3.	*Heliosestrum octonum*, n. sp.,	× 300	440
Fig. 4.	*Heliodiscus solaster*, n. sp.,	× 300	447
Fig. 5.	*Heliodiscus echiniscus*, n. sp.,	× 400	448
Fig. 6.	*Heliosestrum medusinum*, n. sp.,	× 300	438
Fig. 7.	*Sethostaurus conostaurus*, n. sp., Normal form with four regular spines.	× 100	433
Fig. 8.	*Sethostaurus conostaurus*, n. sp., Abnormal form with five spines.	× 100	433
Fig. 9.	*Heliodiscus marginatus*, n. sp.,	× 100	449
Fig. 10.	*Heliodiscus trochiscus*, n. sp.,	× 100	445
Fig. 11.	*Heliodiscus polymorphus*, n. sp.,	× 100	447
Fig. 12.	*Heliodiscus polymorphus*, n. sp.,	× 100	447
Fig. 13.	*Heliodiscus trochiscus*, n. sp.,	× 100	445
Fig. 14.	*Astrophacus trochiscus*, n. sp.,	× 100	453



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1 2. HELIOSTYLUS, 3–14. HELIODISCUS.

PLATE 35.

Legion SPUMELLARIA.

Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 35.

PHACODISCIDA.

Fig. 1. *Heliodiscus pertusus*, n. sp. (vel *Heliosestrum pertusum*), . × 400 448
Irregular form with ten (instead of eight) larger latticed spines.

Fig. 2. *Heliodiscus glyphodon*, n. sp. (vel *Heliosestrum glyphodon*), . × 300 446

Fig. 3. *Heliodrymus ramosus*, n. sp., ... × 300 452

Fig. 4. *Heliodrymus ramosus*, n. sp., ... × 500 452
Medullary shell and a segment of the disk.

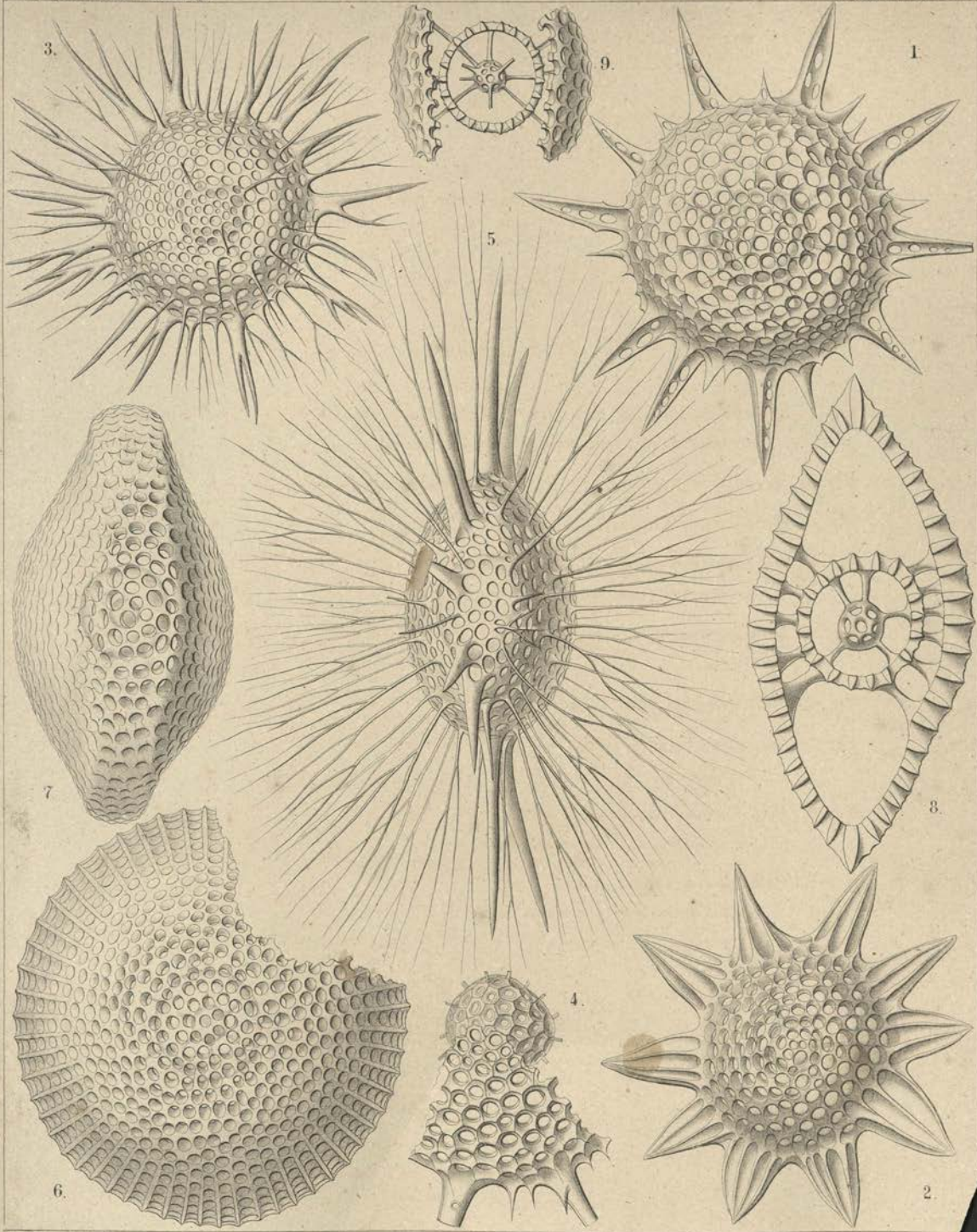
Fig. 5. *Heliodrymus viminalis*, n. sp., ... × 400 452
Marginal view.

Fig. 6. *Phacodiscus clypeus*, n. sp., ... × 400 425

Fig. 7. *Phacodiscus rotula*, n. sp., ... × 400 424
Marginal view.

Fig. 8. *Phacodiscus lentiformis*, n. sp., ... × 400 425
Vertical section nearly through the centre.

Fig. 9. *Phacodiscus clypeus*, n. sp., ... × 400 425
Vertical section nearly through the centre.



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1 2 HELIOSESTRUM 3–5 HELIODRYMUS 6–9 PHACODISCUS

PLATE 36.

Legion SPUMELLARIA.

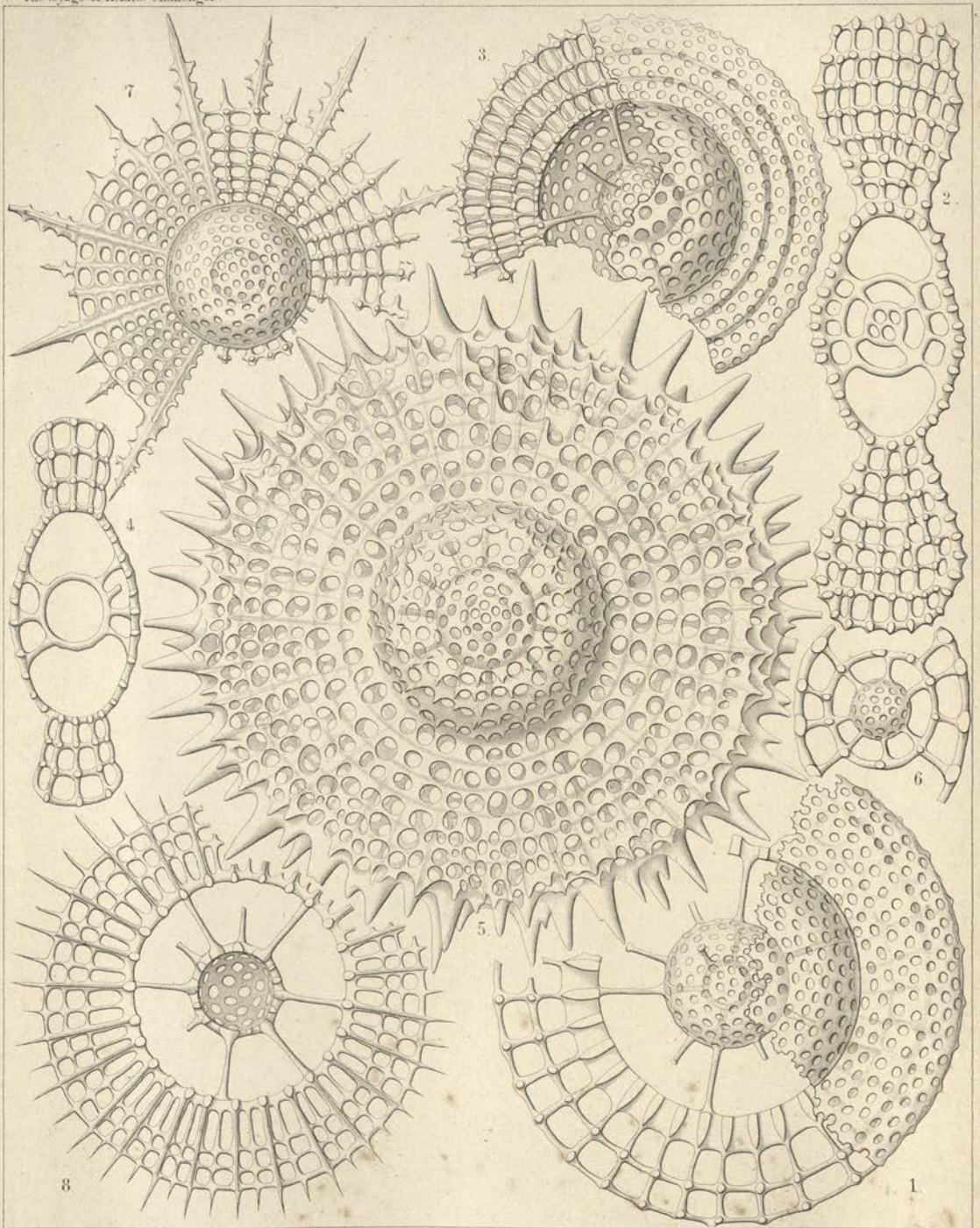
Order DISCOIDEA.

Family COCCODISCIDA.

PLATE 36.

COCCODISCIDA.

		Diam.	Page
Fig. 1.	*Coccodiscus lamarckii*, n. sp., ...	× 500	459
	The left half of the figure represents a horizontal section through the peripheral shell, the right half a view of the surface.		
Fig. 2.	*Coccodiscus gœthei*, n. sp., ...	× 500	461
	Vertical section nearly through the centre.		
Fig. 3.	*Lithocyclia lenticula*, n. sp., ...	× 400	459
Fig. 4.	*Lithocyclia lenticula*, n. sp., ...	× 400	459
	Vertical section through the centre.		
Fig. 5.	*Coccocyclia helianthus*, n. sp., ...	× 400	468
Fig. 6.	*Coccocyclia helianthus*, n. sp., ...	× 500	468
	Vertical section through the outer medullary shell, showing the inner.		
Fig. 7.	*Astrocyclia solaster*, n. sp., ...	× 300	466
Fig. 8.	*Astrocyclia heterocycla*, n. sp., ...	× 400	468
	Horizontal section through the equatorial plane.		



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1. 2. COCCODISCUS 3. 4. LITHOCYCLIA 5. 6. COCCOCYCLIA
7. 8. ASTROCYCLIA

PLATE 37.

Legion SPUMELLARIA.

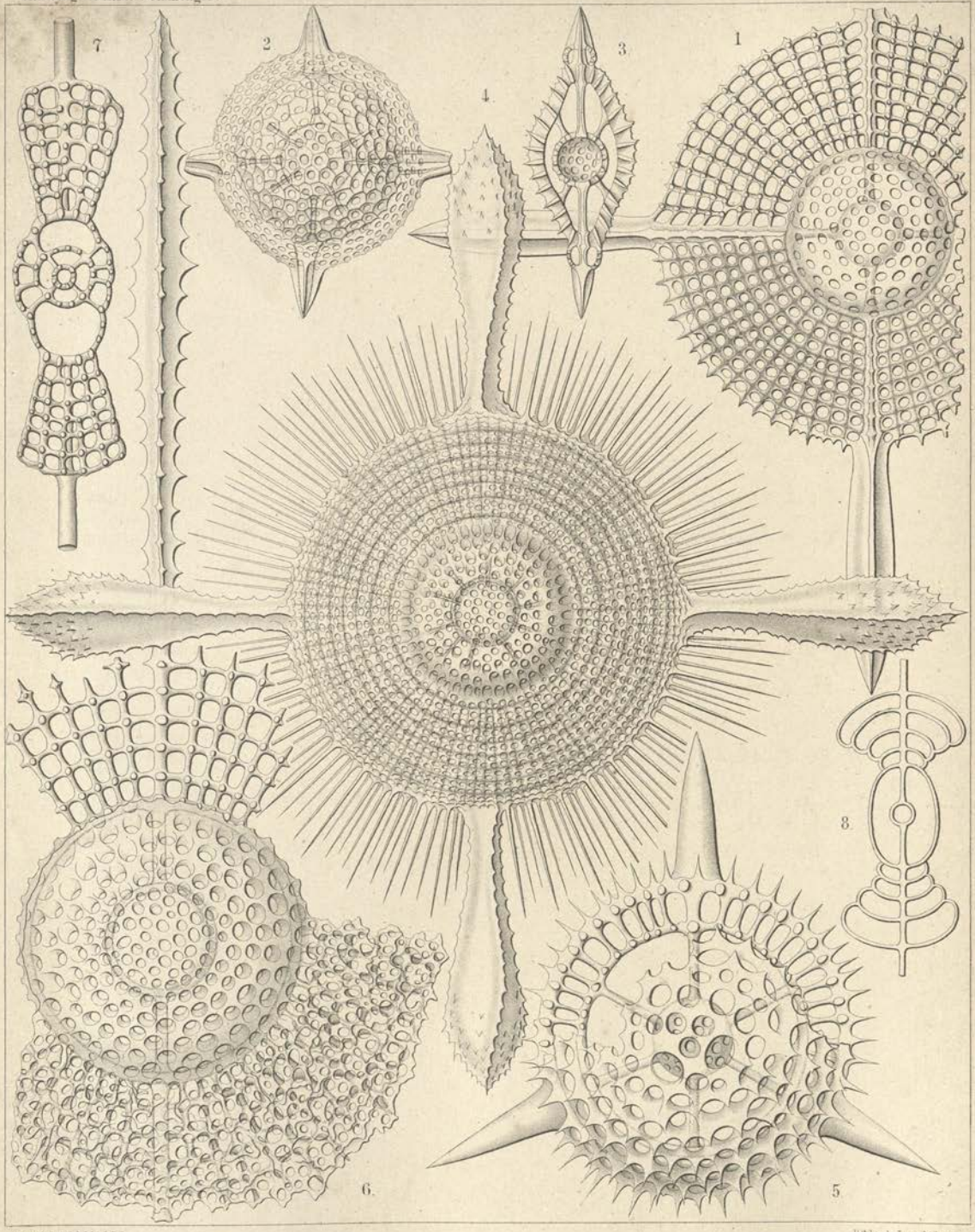
Order DISCOIDEA.

Family COCCODISCIDA.

PLATE 37.

COCCODISCIDA.

		Diam.	Page
Fig. 1.	*Staurocyclia cruciata*, n. sp.,	× 400	465
Fig. 2.	*Staurocyclia phacostaurus*, n. sp.,	× 300	465
Fig. 3.	*Staurocyclia phacostaurus*, n. sp., Vertical section through the centre.	× 300	465
Fig. 4.	*Staurocyclia magniducis*, n. sp. (*Coccostaurus magniducis*),	× 300	466
Fig. 5.	*Trigonocyclia triangularis*, n. sp.,	× 400	464
Fig. 6.	*Stylocyclia prionacantha*, n. sp., A great part of the peripheral shell is removed.	× 500	462
Fig. 7.	*Amphicyclia amphistyla*, n. sp., Vertical section through the centre.	× 300	464
Fig. 8.	*Stylocyclia excavata*, n. sp., Vertical section through the centre.	× 200	463



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1–3. STAUROCYCLIA. 4. COCCOSTAURUS. 5. TRIGONOCYCLIA.
6–8. STYLOCYCLIA.

PLATE 38.

Legion SPUMELLARIA.

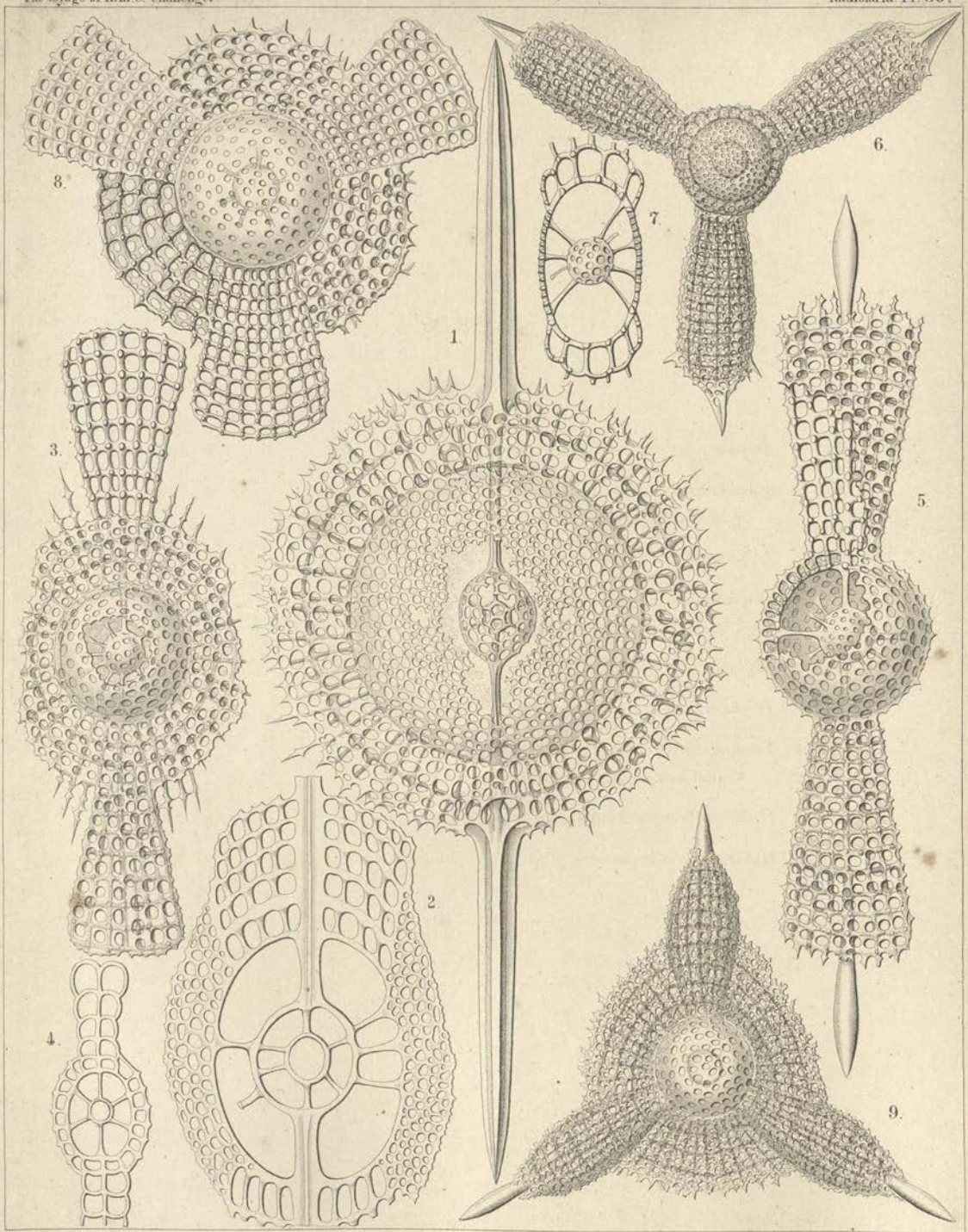
Order DISCOIDEA.

Family COCCODISCIDA.

PLATE 38.

COCCODISCIDA.

	Diam.	Page
Fig. 1. *Amphicyclia chronometra*, n. sp.,	× 400	463
Fig. 2. *Amphicyclia pachydiscus*, n. sp., Vertical section through the centre.	× 500	464
Fig. 3. *Amphiactura amphibrachia*, n. sp.,	× 300	470
Fig. 4. *Amphiactura amphibrachia*, n. sp., Vertical section through the centre.	× 150	470
Fig. 5. *Diplactura diploconus*, n. sp.,	× 300	470
Fig. 6. *Trigonactura triacantha*, n. sp.,	× 200	472
Fig. 7. *Trigonactura triacantha*, n. sp., Vertical section nearly through the centre.	× 400	472
Fig. 8. *Hymenactura archimedis*, n. sp.,	× 300	473
Fig. 9. *Hymenactura copernici*, n. sp.,	× 200	475



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1. 2. AMPHICYCLIA, 3-5. AMPHIACTURA, 6. 7. TRIGONACTURA, 8. 9. HYMENACTURA.

PLATE 39.

Legion SPUMELLARIA.

Order PRUNOIDEA.

Families ELLIPSIDA, DRUPPULIDA, ARTISCIDA et CYPHINIDA.

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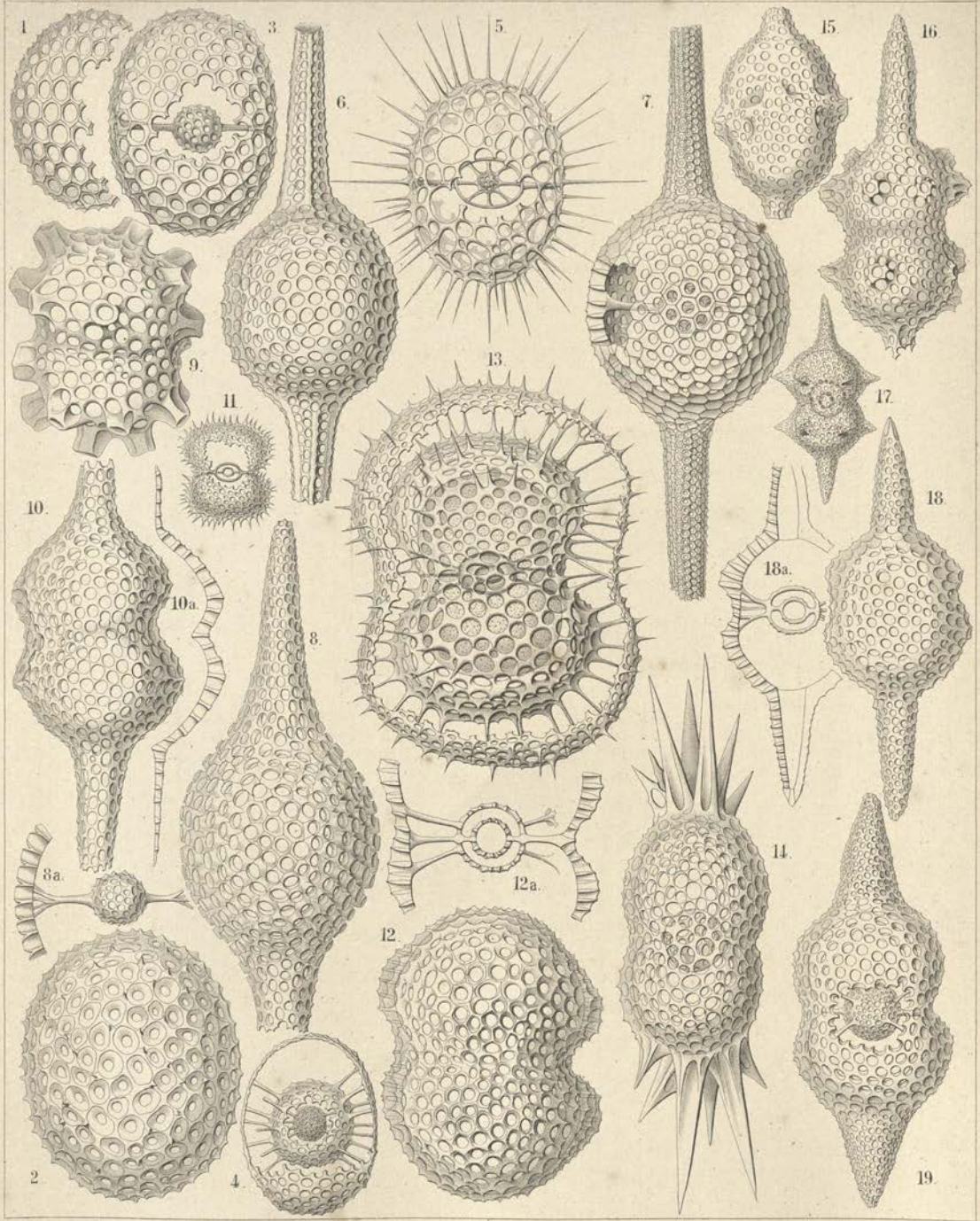
PLATE 39.

Ellipsida, Druppulida, Artiscida et Cyphinida.

		Diam.	Page
Fig. 1.	*Cenellipsis faceta*, n. sp. (vel *Ellipsis faceta*), . . .	× 300	291
Fig. 2.	*Cenellipsis infundibulum*, n. sp. (vel *Ellipsis infundibulum*), .	× 300	292
Fig. 3.	*Druppula pandanus*, n. sp. (vel *Coccymelium pandanus*), .	× 300	308
Fig. 4.	*Prunulum coccymelium*, n. sp. (vel *Coccymelium prunulum*), .	× 300	313
Fig. 5.	*Prunocarpus artocarpium*, n. sp. (vel *Artocarpium indicum*),	× 300	316
Fig. 6.	*Pipettella prismatica*, n. sp., ...	× 300	305
Fig. 7.	*Pipetta tuba*, n. sp., ...	× 300	337
Fig. 8.	*Pipetta fusus*, n. sp., ...	× 300	337
	Fig. 8*a*. The enclosed medullary shell.		
Fig. 9.	*Artiscus nodosus*, n. sp. (vel *Artidium nodosum*), . .	× 400	356
Fig. 10.	*Cannartus violina*, n. sp., ...	× 300	358
Fig. 11.	*Cyphonium cribellum*, n. sp., ...	× 200	365
Fig. 12.	*Cyphonium virgineum*, n. sp. (vel *Ommatospyris virginea*), .	× 400	363
	Fig. 12*a*. Vertical section through the double medullary shell.		
Fig. 13.	*Cypassis puella*, n. sp. (vel *Didymospyris puella*), . .	× 400	367
	The enclosed central capsule is visible.		
Fig. 14.	*Cyphinus amphilophus*, n. sp., ...	× 300	370
Fig. 15.	*Pipettaria tubaria*, n. sp., ...	× 300	339
Fig. 16.	*Cannartidium mammiferum*, n. sp., ...	× 300	375
Fig. 17.	*Cannartidium mastophorum*, n. sp., ...	× 150	375
Fig. 18.	*Cannartidium bicinctum*, n. sp., ...	× 300	374
	Fig. 18*a*. Vertical section through the main axis.		
Fig. 19.	*Cannartiscus amphiconiscus*, n. sp., ...	× 300	372



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1 2 ELLIPSIS, 3 4 COCCYMELIUM, 5 ARTOCARPIUM, 6 PIPETTELLA,
7 8 PIPETTA, 9 ARTIDIUM, 10 CANNARTUS, 11 12 OMMATOSPYRIS,
13 DIDYMOSPYRIS, 14 CYPHINIDIUM, 15–19 CANNARTIDIUM.

PLATE 40.

Legion SPUMELLARIA.

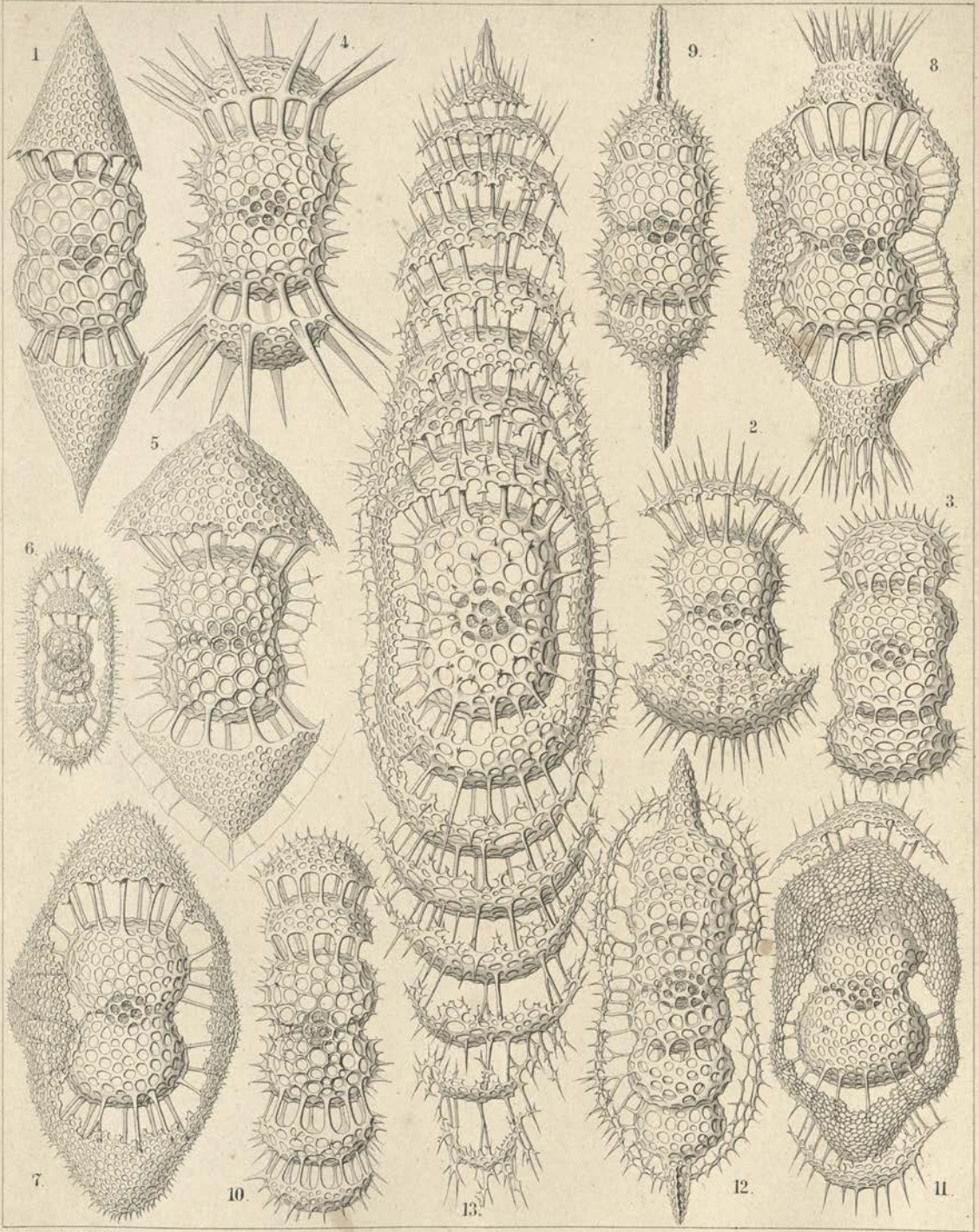
Order PRUNOIDEA.

Families PANARTIDA et ZYGARTIDA.

PLATE 40.

PANARTIDA et ZYGARTIDA.

		Diam.	Page
Fig. 1.	*Panartus diploconus*, n. sp., ...	× 300	379
Fig. 2.	*Panartus pluteus*, n. sp., ...	× 300	382
Fig. 3.	*Panartus tetrathalamus*, n. sp., ...	× 300	378
Fig. 4.	*Panicium coronatum*, n. sp. (vel *Panartidium coronatum*), .	× 300	386
Fig. 5.	*Peripanartus amphiconus*, n. sp., ...	× 300	383
Fig. 6.	*Peripanartus cylindrus*, n. sp., ...	× 150	384
Fig. 7.	*Peripanartus atractus*, n. sp., ...	× 300	384
Fig. 8.	*Peripanicium amphicorona*, n. sp., ...	× 300	387
Fig. 9.	*Panarium tubularium*, n. sp., ...	× 300	390
Fig. 10.	*Ommatocampe nereides*, n. sp., ...	× 300	394
Fig. 11.	*Cyphocolpus virginis*, n. sp. (vel *Zygartus virginis*), . .	× 300	369
Fig. 12.	*Desmartus larvalis*, n. sp. (vel *Zygartus larvalis*), . .	× 300	398
Fig. 13.	*Zygartus chrysalis*, n. sp. (vel *Zygocampe chrysalis*), . .	× 400	401



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1-3. PANARTUS, 4. PANARTIDIUM, 5-8. PERIPANARTUS,
9. PANARIUM, 10. OMMATOCAMPE, 11-13. ZYGARTUS.

PLATE 41.

Legion SPUMELLARIA.

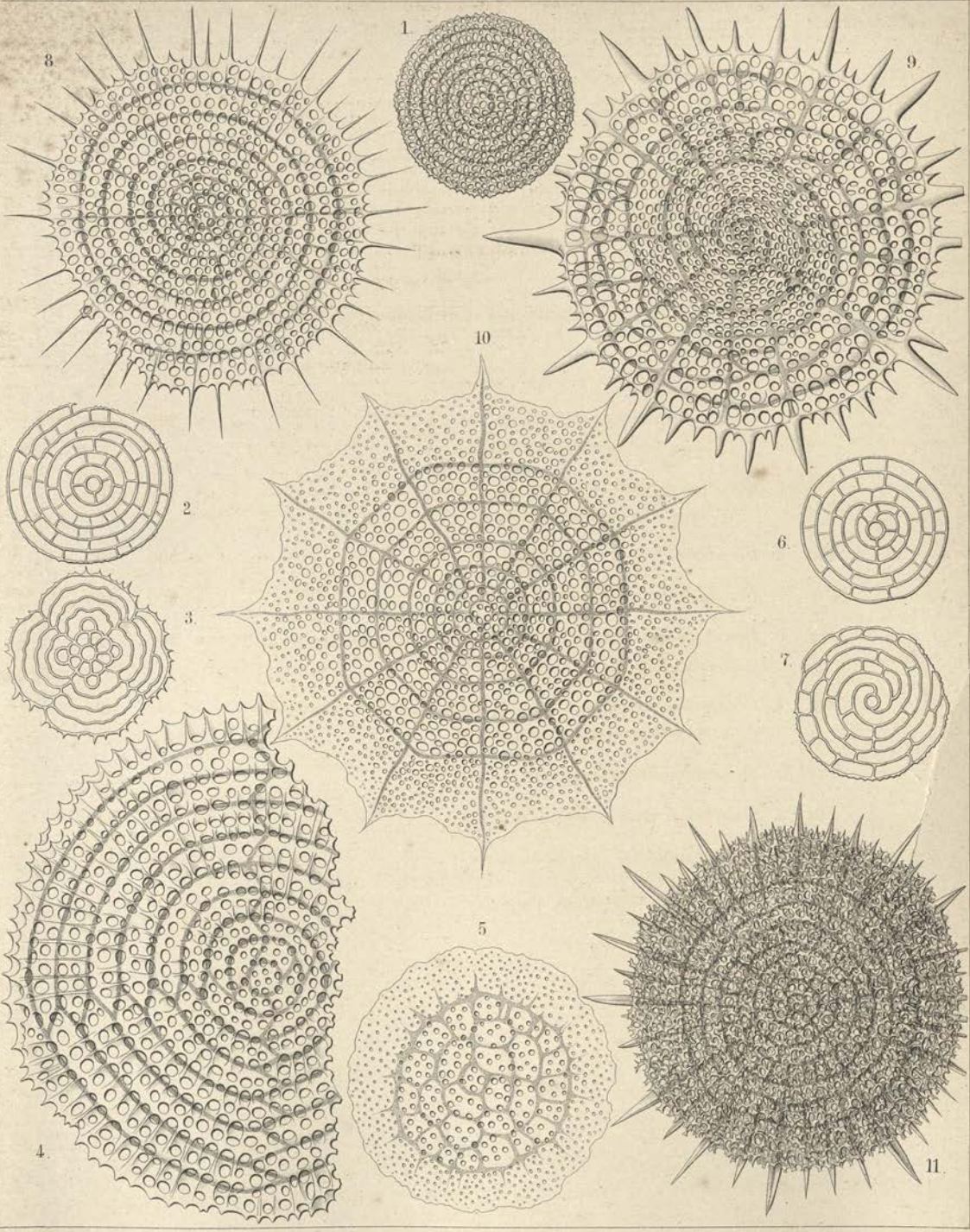
Order DISCOIDEA.

Families PORODISCIDA et SPONGODISCIDA.

PLATE 41.

Porodiscida et Spongodiscida.

		Diam.	Page
Fig. 1.	*Porodiscus flustrella*, n. sp.,	× 300	493
Fig. 2.	*Porodiscus perispira*, n. sp., The rings alone (equatorial section).	× 200	495
Fig. 3.	*Porodiscus quadrigatus*, n. sp., The rings alone (equatorial section).	× 200	494
Fig. 4.	*Porodiscus semispiralis*, n. sp.,	× 500	497
Fig. 5.	*Perichlamydium saturnus*, n. sp.,	× 300	499
Fig. 6.	*Porodiscus centrospira*, n. sp. (vel *Perispongidium centrospira*), The rings alone (equatorial section).	× 200	495
Fig. 7.	*Porodiscus irregularis*, n. sp. (vel *Perispongidium irregulare*), The rings alone (equatorial section).	× 200	498
Fig. 8.	*Stylodictya heliospira*, n. sp.,	× 400	512
Fig. 9.	*Stylodictya centrospira*, n. sp.,	× 400	512
Fig. 10.	*Stylochlamydium asteriscus*, n. sp.,	× 400	514
Fig. 11.	*Stylotrochus geddesii*, n. sp.,	× 300	585



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1-4 PORODISCUS, 5 PERICHLAMYDIUM, 6 7 PERISPONGIDIUM,
8 9 STYLODICTYA, 10 STYLOCHLAMYDIUM, 11 STYLOSPONGIDIUM.

PLATE 42.

Legion SPUMELLARIA.

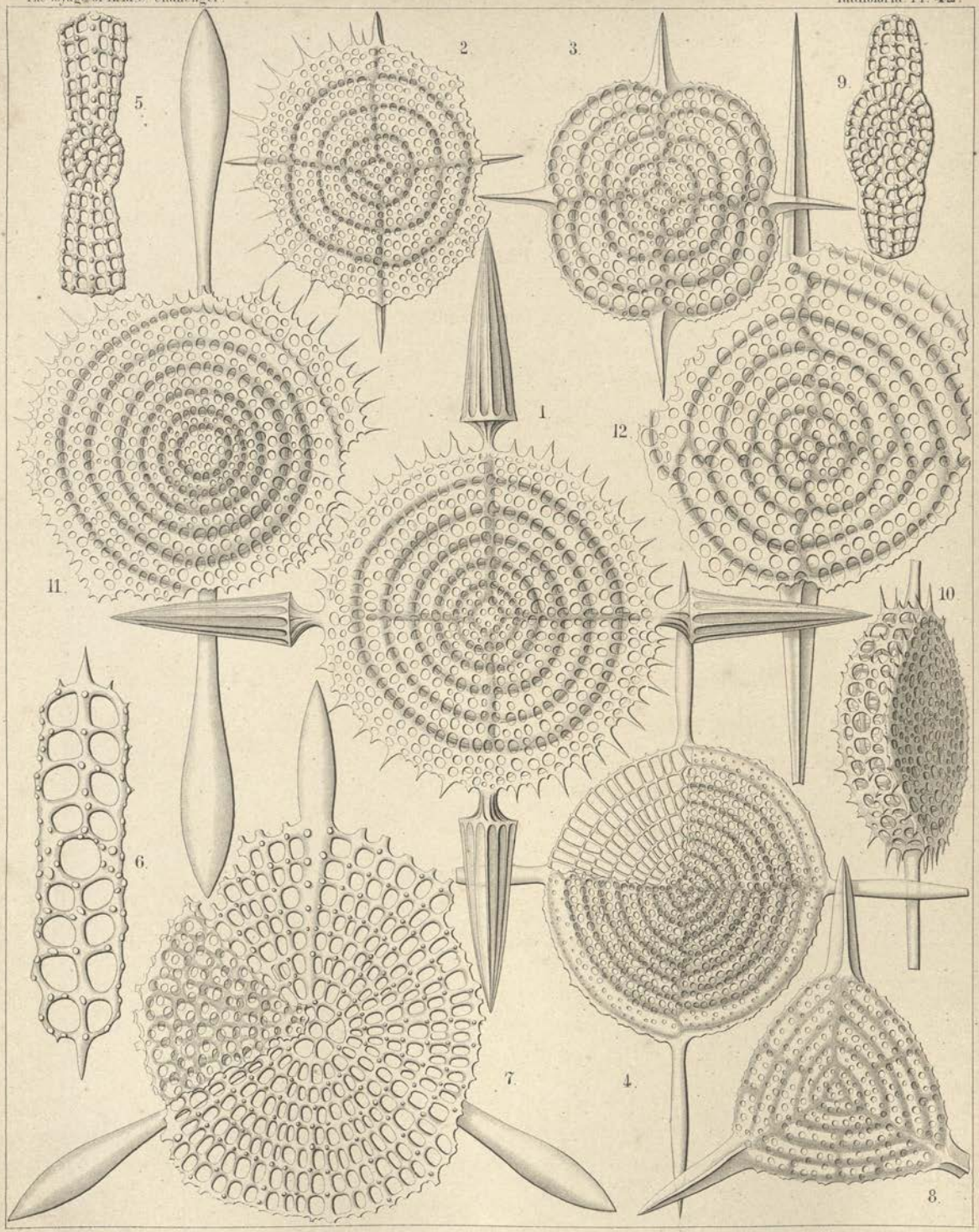
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 42.

PORODISCIDA.

		Diam.	Page
Fig. 1.	*Staurodictya elegans*, n. sp.,	× 500	507
Fig. 2.	*Staurodictya ciliata*, n. sp.,	× 400	506
Fig. 3.	*Staurodictya medusa*, n. sp.,	× 400	506
Fig. 4.	*Staurodictya cruciata*, n. sp.,	× 300	507
Fig. 5.	*Staurodictya cruciata*, n. sp., Vertical section through the disk.	× 300	507
Fig. 6.	*Staurodictya grandis*, n. sp., Vertical section through the disk.	× 300	508
Fig. 7.	*Tripodictya triacantha*, n. sp.,	× 400	505
Fig. 8.	*Tripodictya trigonaria*, n. sp.,	× 400	505
Fig. 9.	*Tripodictya tribelonia*, n. sp., Vertical section through the disk.	× 400	505
Fig. 10.	*Xiphodictya amphibelonia*, n. sp., Marginal view.	× 300	503
Fig. 11.	*Xiphodictya amphirrhopalia*, n. sp.,	× 400	504
Fig. 12.	*Xiphodictya staurospira*, n. sp.,	× 500	504



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1-6. STAURODICTYA, 7-9. TRIPODICTYA, 10-12. XIPHODICTYA.

PLATE 43.

Legion SPUMELLARIA.

Order DISCOIDEA.

Family PORODISCIDA.

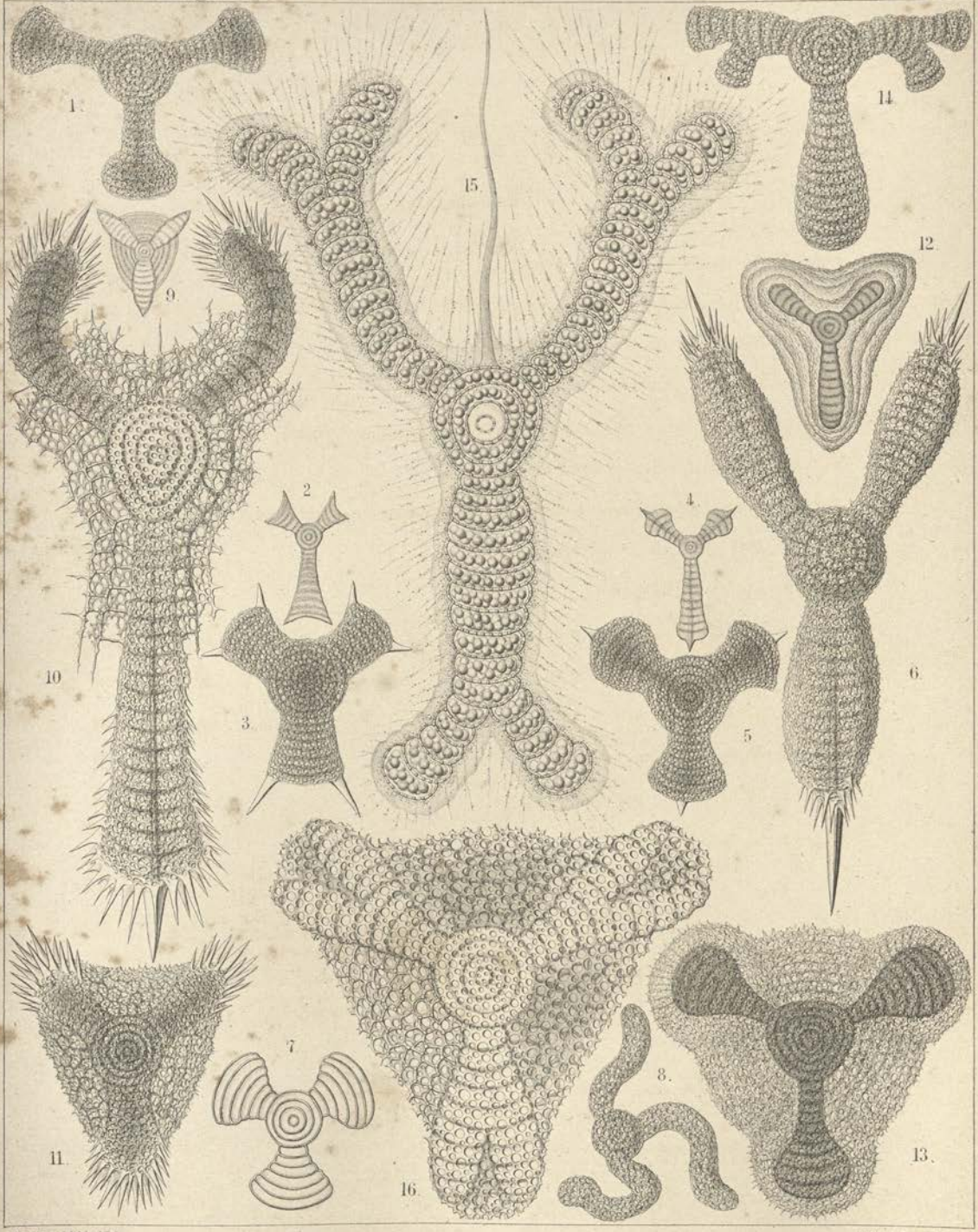
PLATE 43.

PORODISCIDA.

		Diam.	Page
Fig. 1.	*Rhopalastrum malleus*, n. sp.,	× 100	527
Fig. 2.	*Rhopalastrum ypsilinum*, n. sp.,	× 50	528
Fig. 3.	*Rhopalastrum hexaceros*, n. sp.,	× 100	529
Fig. 4.	*Rhopalastrum triceros*, n. sp.,	× 50	529
Fig. 5.	*Rhopalastrum trispinosum*, n. sp. (vel *Dictyastrum trispinosum*),	× 150	525
Fig. 6.	*Rhopalastrum arcticum*, n. sp.,	× 300	529
Fig. 7.	*Rhopalastrum hexagonum*, n. sp. (vel *Dictyastrum hexagonum*),	× 100	525
Fig. 8.	*Rhopalastrum irregulare*, n. sp.,	× 100	528
Fig. 9.	*Euchitonia lanceolata*, n. sp.,	× 80	534
Fig. 10.	*Euchitonia carcinus*, n. sp.,	× 300	535
Fig. 11.	*Euchitonia echinata*, n. sp.,	× 120	536
Fig. 12.	*Euchitonia stohrii*, n. sp.,	× 100	534
Fig. 13.	*Hymeniastrum euclidis*, n. sp.,	× 200	531
Fig. 14.	*Chitonastrum jugatum*, n. sp.,	× 200	537
Fig. 15.	*Chitonastrum lyra*, n. sp.,	× 500	538

A living specimen observed. The entire shell is enveloped by the calymma and surrounded by radiating pseudopodia (drawn much too short). Between the two paired arms arises a large "sarcode-flagellum." The central chamber and the first enveloping ring are filled by the clear nucleus; the other rings and all the chambers of the arms contain numerous pink oil-globules.

Fig. 16.	*Trigonastrum regulare*, n. sp. (vel *Chitonastrum regulare*),	× 200	539



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1-8. RHOPALASTRUM, 9-11 HYMENIASTRUM, 12. 13 EUCHITONIA.
14. 15. DICTYASTRUM, 16 CHITONASTRUM.

PLATE 44.

Legion SPUMELLARIA.

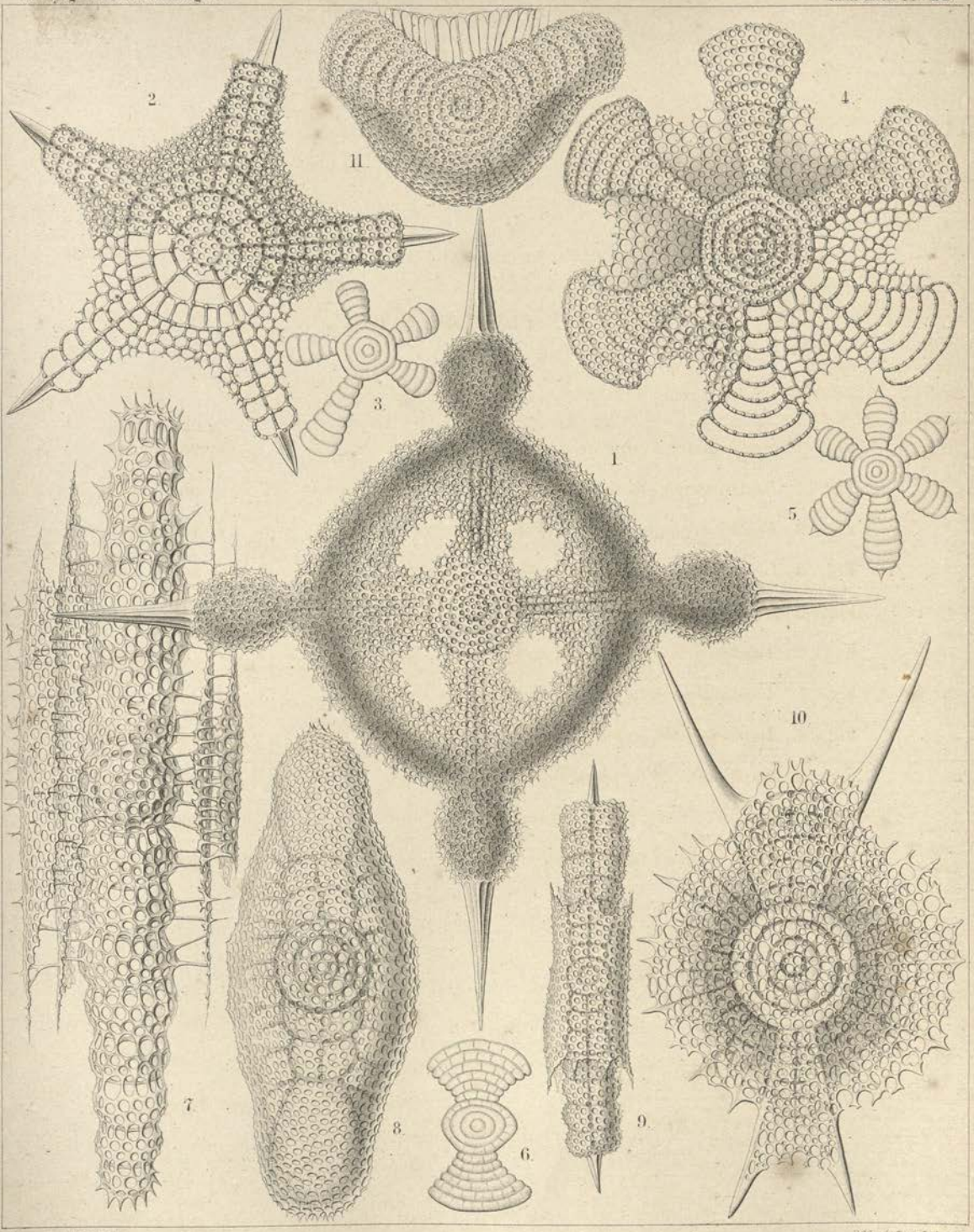
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 44.

PORODISCIDA.

		Diam.	Page
Fig. 1.	*Stephanastrum capitatum*, n. sp., ...	× 200	549
Fig. 2.	*Pentinastrum asteriscus*, n. sp., ...	× 300	557
Fig. 3.	*Pentalastrum ophidiaster*, n. sp., ...	× 100	557
Fig. 4.	*Hexinastrum geryonidum*, n. sp., ...	× 300	560
Fig. 5.	*Hexalastrum orchidaceum*, n. sp., ...	× 50	560
Fig. 6.	*Amphibrachium dilatatum*, n. sp., ...	× 50	517
Fig. 7.	*Amphymenium zygartus*, n, sp., ...	× 400	520
Fig. 8.	*Amphymenium pupula*, n. sp., ...	× 300	519
Fig. 9.	*Amphymenium amphistylium*, n. sp., ...	× 200	520
Fig. 10.	*Amphicraspedum murrayanum*, n. sp., . . .	× 300	523
Fig. 11.	*Amphymenium monstrosum*, n. sp., ...	× 300	520



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1 STEPHANASTRUM, 2.3 PENTALASTRUM, 4.5 HEXALASTRUM,
6 AMPHIBRACHIUM, 7-11 AMPHYMENIUM.

PLATE 45.

Legion SPUMELLARIA.

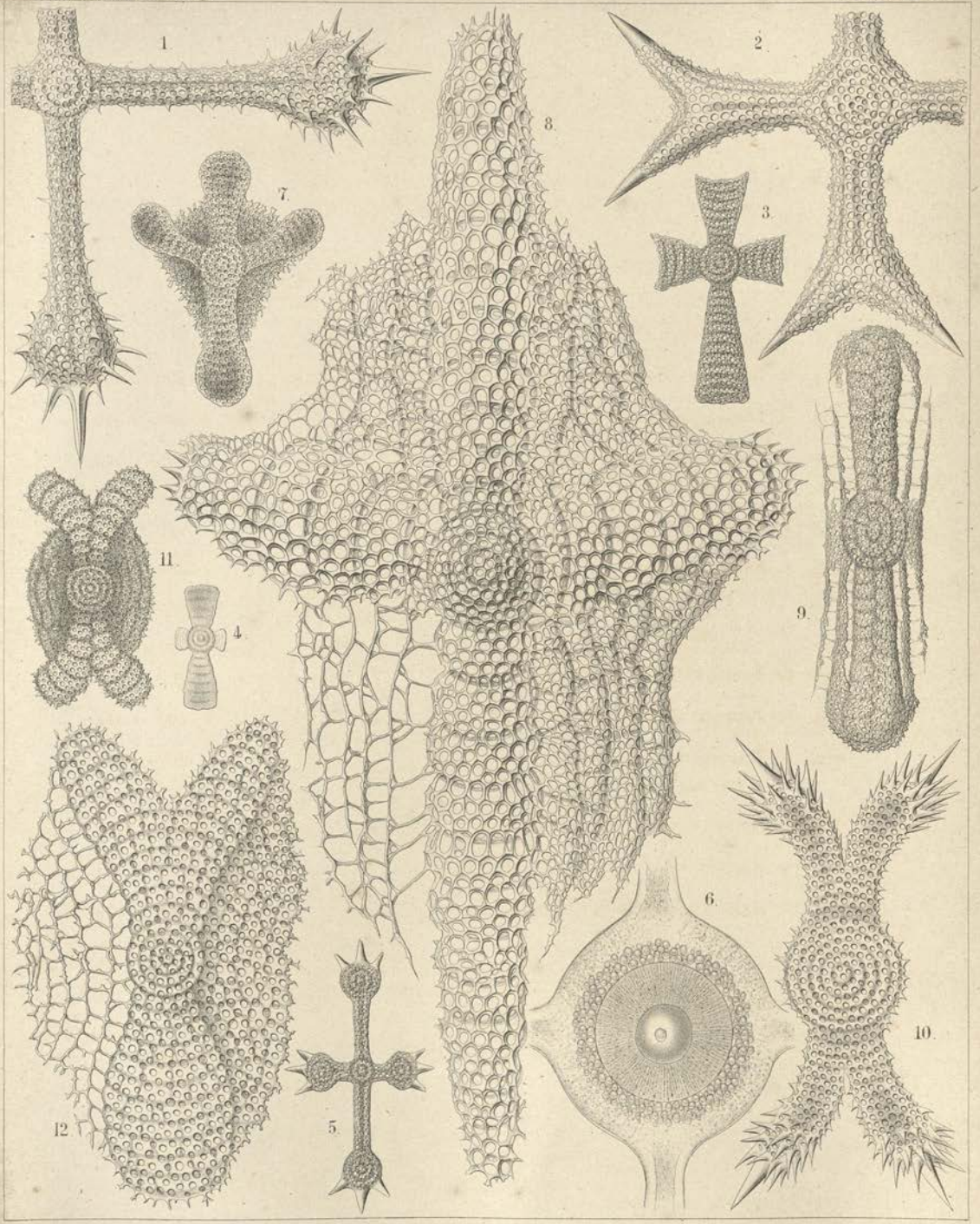
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 45.

PORODISCIDA.

		Diam.	Page
Fig. 1.	*Stauralastrum rhopalophorum*, n. sp.,	× 200	541
Fig. 2.	*Dicranastrum cornutum*, n. sp.,	× 200	551
Fig. 3.	*Hagiastrum mosis*, n. sp.,	× 100	543
Fig. 4.	*Hagiastrum mosis*, n. sp.,	× 50	543
	Lateral view, from the edge.		
Fig. 5.	*Hagiastrum buddhæ*, n. sp.,	× 50	542
Fig. 6.	*Stauralastrum cruciforme*, n. sp. (in glycerine),	× 500	540
	The central capsule contains a large central nucleus with nucleolus, and is surrounded by the jelly calymma and numerous small zooxanthellæ. The endoplasm is radially striped.		
Fig. 7.	*Tesserastrum democriti*, n. sp.,	× 100	548
Fig. 8.	*Tesserastrum straussii*, n. sp.,	× 500	547
Fig. 9.	*Tesserastrum brunonis*, n. sp.,	× 200	548
	Disk seen from the edge.		
Fig. 10.	*Amphirhopalum echinatum*, n. sp.,	× 300	522
Fig. 11.	*Amphicraspedum maclagganium*, n. sp.,	× 100	523
Fig. 12.	*Amphicraspedum wyvilleanum*, n. sp.,	× 300	523



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1–6. HAGIASTRUM, 7–9. HISTIASTRUM, 10. AMPHIRHOPALUM.
11. 12. AMPHICRASPEDUM.

PLATE 46.

Legion SPUMELLARIA.

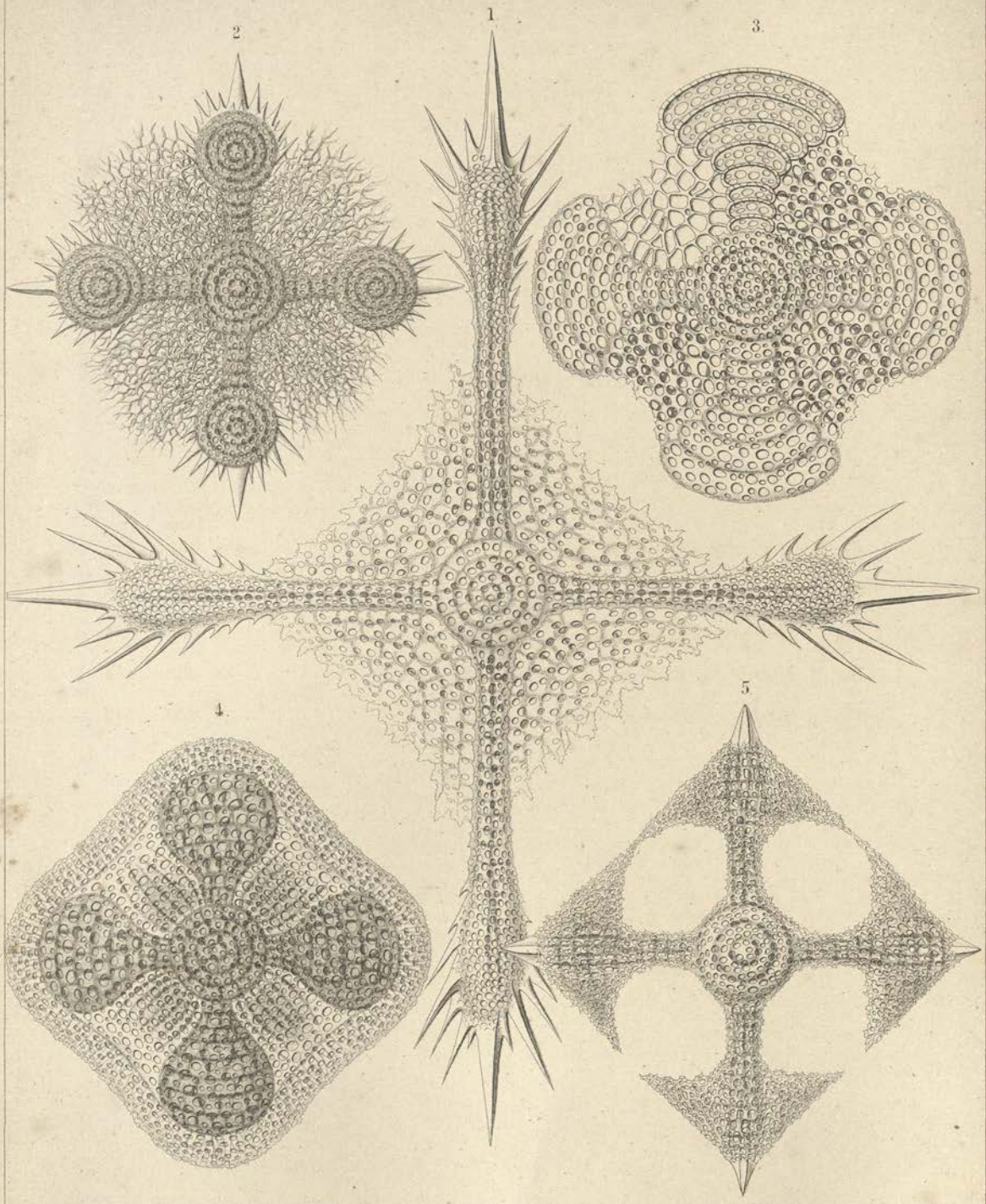
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 46.

PORODISCIDA.

	Diam.	Page
Fig. 1. *Histiastrum boseanum*, n. sp., ...	× 400	546
Fig. 2. *Histiastrum pentadiscus*, n. sp., ...	× 200	546
Fig. 3. *Histiastrum quadrigatum*, n. sp., ...	× 300	544
Fig. 4. *Histiastrum velatum*, n. sp., ...	× 200	545
Fig. 5. *Stephanastrum quadratum*, n. sp., ...	× 200	549



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1-3 HISTIASTRUM. 4 DICTYASTRUM. 5 STEPHANASTRUM.

PLATE 47.

Legion SPUMELLARIA.

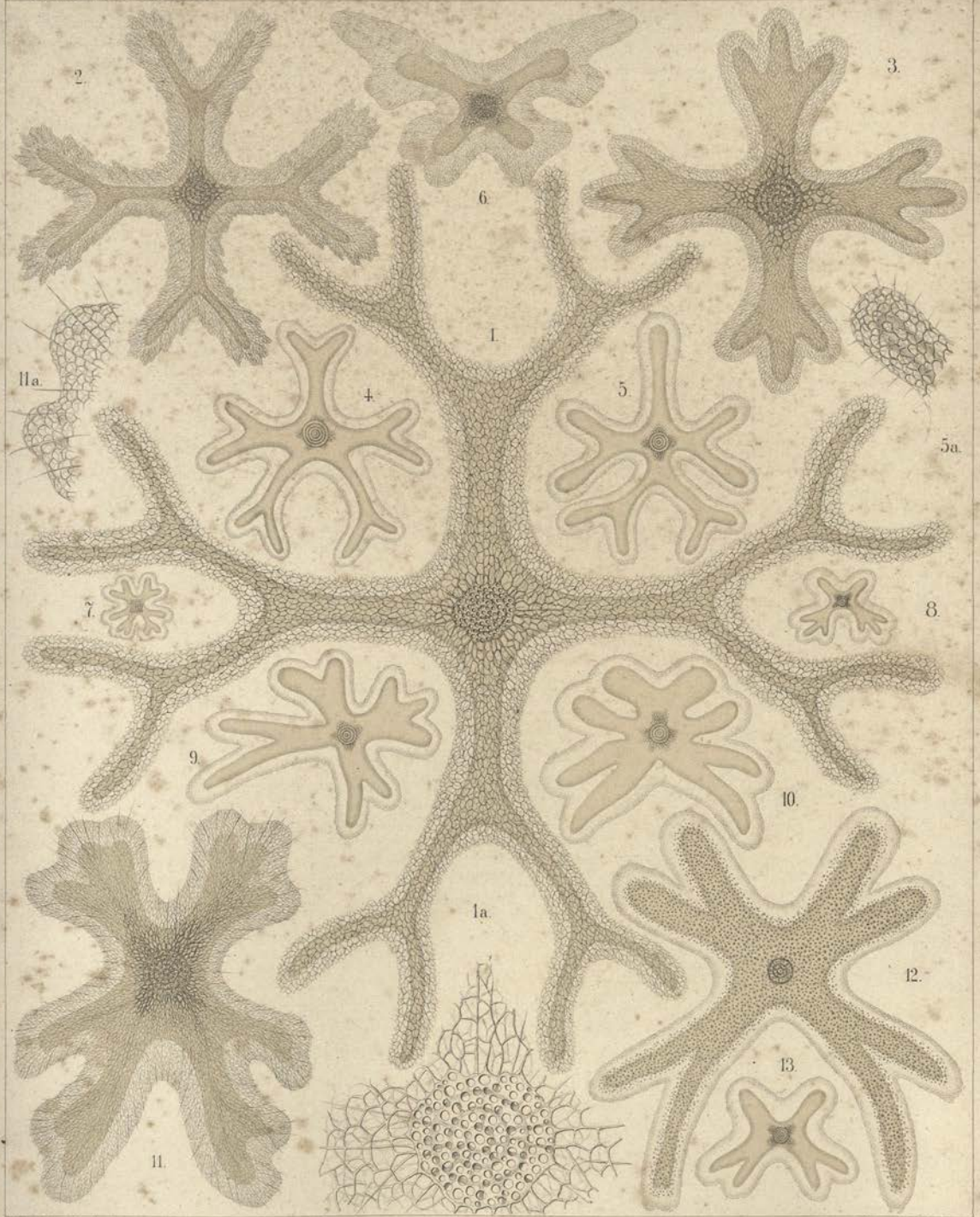
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 47.

PORODISCIDA.

		Diam.	Page
Fig. 1.	*Dicranastrum bifurcatum*, n. sp.,	× 200	552
	Fig. 1*a*. Central disc of the same,	× 600	
Fig. 2.	*Dicranastrum furcatum*, n. sp.,	× 100	550
Fig. 3.	*Dicranastrum wyvillei*, n. sp.,	× 100	551
Fig. 4.	*Pentophiastrum forcipatum*, n. sp.,	× 50	559
Fig. 5.	*Pentophiastrum caudatum*, n. sp.,	× 50	559
Fig. 6.	*Myelastrum papilio*, n. sp.,	× 50	554
Fig. 7.	*Myelastrum decaceros*, n. sp.,	× 20	554
Fig. 8.	*Myelastrum heteropterum*, n. sp.,	× 20	553
Fig. 9.	*Myelastrum anomalum*, n. sp.,	× 50	556
Fig. 10.	*Myelastrum farfalla*, n. sp.,	× 50	554
Fig. 11.	*Myelastrum dodecaceros*, n. sp.,	× 100	554
Fig. 12.	*Myelastrum octocorne*, n. sp.,	× 90	553
Fig. 13.	*Myelastrum medullare*, n. sp.,	× 50	553



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1. 2. DICRANASTRUM, 3. TRICANASTRUM, 4. 5. PENTALASTRUM,
6–13. MYELASTRUM.

PLATE 48.

Legion SPUMELLARIA.

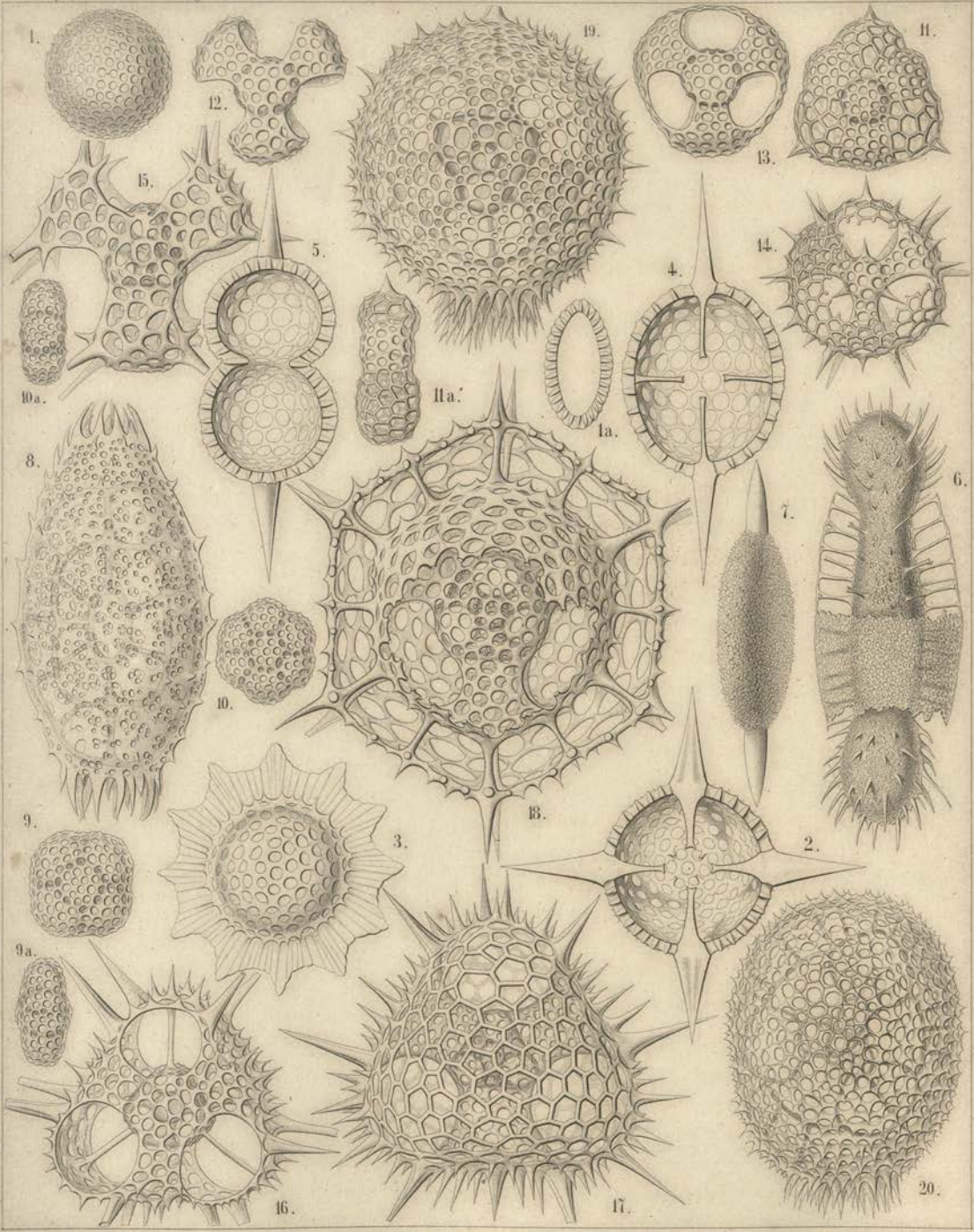
Orders PRUNOIDEA ET DISCOIDEA

Families ELLIPSIDA, ARTISCIDA, SPONGURIDA, CENODISCIDA, PORODISCIDA et PYLODISCIDA.

PLATE 48.

ELLIPSIDA, ARTISCIDA, SPONGURIDA, CENODISCIDA, PORODISCIDA, et PYLODISCIDA.

		Diam.	Page
Fig. 1.	*Cenodiscus phacoides*, n. sp., ...	× 100	411
	Fig. 1*a*. Vertical section.		
Fig. 2.	*Crucidiscus endostaurus*, n. sp., ...	× 200	416
	Equatorial section.		
Fig. 3.	*Trochodiscus stellaris*, n. sp., ...	× 200	418
Fig. 4.	*Axoprunum stauraxonium*, n. sp., ...	× 300	298
	Equatorial section.		
Fig. 5.	*Stylartus bipolaris*, n. sp., ...	× 200	357
	Vertical section.		
Fig. 6.	*Spongocore puella*, n. sp., ...	× 300	347
Fig. 7.	*Spongoprunum amphilonche*, n. sp., ...	× 300	347
Fig. 8.	*Stomatodiscus osculatus*, n. sp., ...	× 600	503
Fig. 9.	*Archidiscus stauroniscus*, n. sp., ...	× 400	487
	Fig. 9*a*. Marginal view.		
Fig. 10.	*Archidiscus hexoniscus*, n. sp., ...	× 400	488
	Fig. 10*a*. Marginal view.		
Fig. 11.	*Archidiscus pyloniscus*, n. sp., ...	× 400	488
	Fig. 11*a*. Marginal view.		
Fig. 12.	*Triolena primordialis*, n. sp., ...	× 800	564
Fig. 13.	*Triopyle hexagona*, n. sp., ...	× 600	565
Fig. 14.	*Triodiscus spinosus*, n. sp., ...	× 600	565
Fig. 15.	*Pylolena armata*, n. sp., ...	× 300	568
Fig. 16.	*Hexapyle dodecantha*, n. sp., ...	× 300	569
Fig. 17.	*Pylodiscus triangularis*, n. sp., ...	× 400	570
Fig. 18.	*Discozonium hexagonium*, n. sp., ...	× 400	572
Fig. 19.	*Discopyle osculata*, n. sp., ...	× 400	573
Fig. 20.	*Discopyle elliptica*, n. sp., ...	× 400	573



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1–3. CENODISCUS, 4. AXOPRUNUM, 5. STYLARTUS, 6. SPONGOCORE, 7. SPONGOPRUNUM, 8. STOMATODISCUS, 9–11. ARCHIDISCUS, 12–20. PYLODISCUS.

PLATE 49.

Legion SPUMELLARIA.

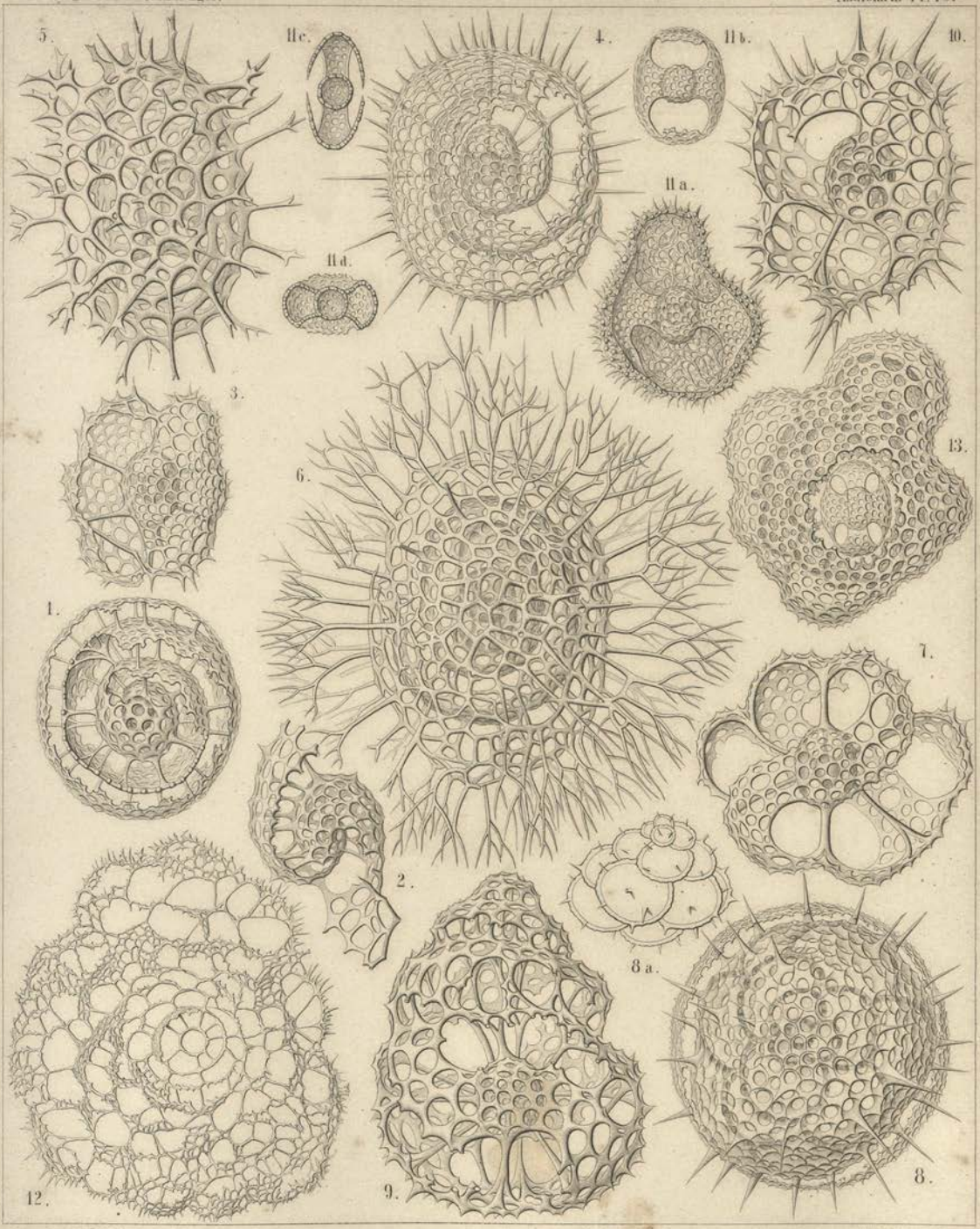
Order LARCOIDEA.

Families LITHELIDA, STREBLONIDA, PHORTICIDA et SOREUMIDA.

PLATE 49.

LITHELIDA, STREBLONIDA, PHORTICIDA et SOREUMIDA.

		Diam.	Page
Fig. 1.	*Spirema melonia*, n. sp., ...	× 300	692
Fig. 2.	*Lithelius solaris*, n. sp. (the first central convolutions only), .	× 300	695
Fig. 3.	*Larcospira quadrangula*, n. sp., ...	× 300	696
Fig. 4.	*Pylospira octopyle*, n. sp., ...	× 300	698
Fig. 5.	*Tholospira cervicornis*, n. sp., ...	× 300	700
Fig. 6.	*Tholospira dendrophora*, n. sp., ...	× 300	700
Fig. 7.	*Spironium octonium*, n. sp., ...	× 300	701
Fig. 8.	*Streblacantha siderolina*, n. sp., ...	× 300	706
	Fig. 8*a*. Outlines of the chambers, ...	× 200	
Fig. 9.	*Streblopyle helicina*, n. sp., ...	× 300	707
Fig. 10.	*Phorticium pylonium*, n. sp., ...	× 300	709
Fig. 11.	*Spongophortis larnacilla*, n. sp., ...	× 200	711
	Fig. 11*a*. The upper half of the cortical shell is removed. Figs. 11*b* to 11*d*. The enclosed medullary *Larnacilla*-shell. *b*, Dorsal view; *c*, lateral view; *d*, basal view.		
Fig. 12.	*Soreuma irregulare*, n. sp., ...	× 200	713
Fig. 13.	*Sorolarcus larnacillifer*, n. sp., ...	× 300	715



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1–7. LITHELIUS, 8. 9. STREBLONIA, 10. 11. PHORTICIUM,
12. 13. SOREUMA.

PLATE 50.

Legion SPUMELLARIA.

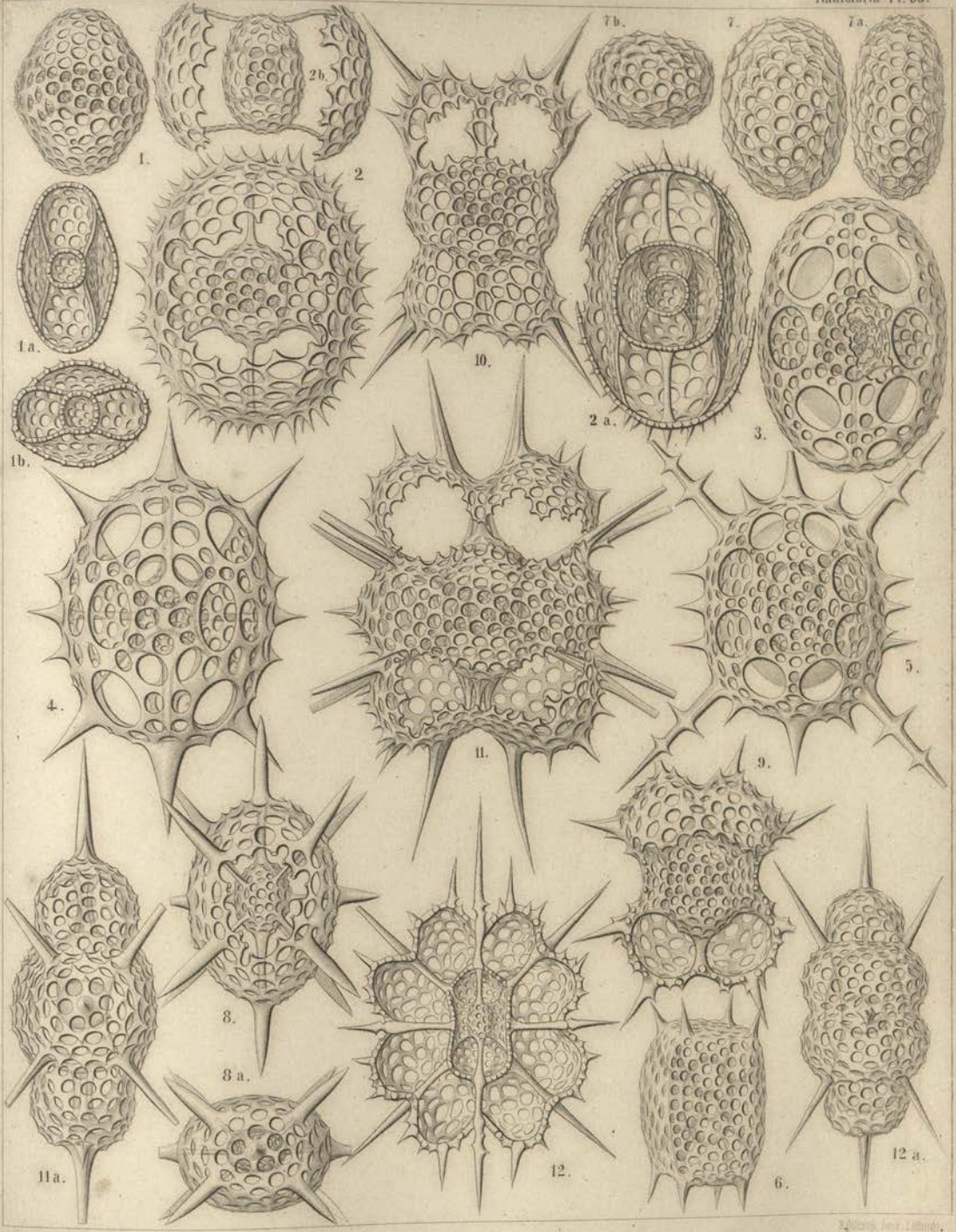
Order LARCOIDEA.

Families LARCARIDA, LARNACIDA et ZONARIDA.

PLATE 50.

LARCARIDA, LARNACIDA et ZONARIDA.

		Diam.	Page
Fig. 1.	*Larnacilla typus*, n. sp., From the sagittal pole (dorsal view). Fig. 1*a*. From the lateral pole (sagittal section). Fig. 1*b*. From the principal pole (equatorial section).	× 300	617
Fig. 2.	*Larnacalpis lentellipsis*, n. sp., From the sagittal pole (dorsal view). Fig. 2*a*. From the lateral pole (sagittal section). Fig. 2*b*. From the principal pole (equatorial section).	× 400	620
Fig. 3.	*Larnacalpis triaxonia*, n. sp., From the sagittal pole (dorsal view).	× 400	621
Fig. 4.	*Larnacantha hexacantha*, n. sp., From the sagittal pole (dorsal view).	× 400	622
Fig. 5.	*Larnacantha bicruciata*, n. sp., Frontal view.	× 300	623
Fig. 6.	*Larnacantha prismatica*, n. sp., Half frontal, half lateral view.	× 300	623
Fig. 7.	*Cenolarcus primordialis*, n. sp., From the sagittal pole. Fig. 7*a*. From the lateral pole. Fig. 7*b*. From the principal pole.	× 300	607
Fig. 8.	*Larcidium dodecanthum*, n. sp., From the sagittal pole. Fig. 8*a*. From the principal pole.	× 300	612
Fig. 9.	*Zonarium octangulum*, n. sp., Frontal view.	× 300	685
Fig. 10.	*Zoniscus tetracanthus*, n. sp., Frontal view.	× 300	687
Fig. 11.	*Zoniscus hexatholius*, n. sp., Dorsal view (from the sagittal pole). Fig. 11*a*. Lateral view (from the frontal pole).	× 400	687
Fig. 12.	*Zonidium octotholium*, n. sp., Frontal section (from the sagittal pole). Fig. 12*a*. Lateral view (from the frontal pole).	× 300	688



1. LARNACILLA. 2–6. LARNACALPIS. 7. CENOLARCUS.
8. LARCIDIUM. 9–12. ZONARIUM.

PLATE 51.

Legion NASSELLARIA.

Order CYRTOIDEA.

Families TRIPOCALPIDA, PHÆNOCALPIDA et CYRTOCALPIDA.

PLATE 51.

Tripocalpida, Phænocalpida et Cyrtocalpida.

		Diam.	Page
Fig. 1.	*Tripterocalpis phylloptera*, n. sp., ...	× 400	1138
Fig. 2.	*Tripterocalpis conoptera*, n. sp., ...	× 300	1138
Fig. 3.	*Tripterocalpis ogmoptera*, n. sp., ...	× 300	1138
Fig. 4.	*Tripterocalpis ogmoptera*, n. sp., ...	× 500	1138

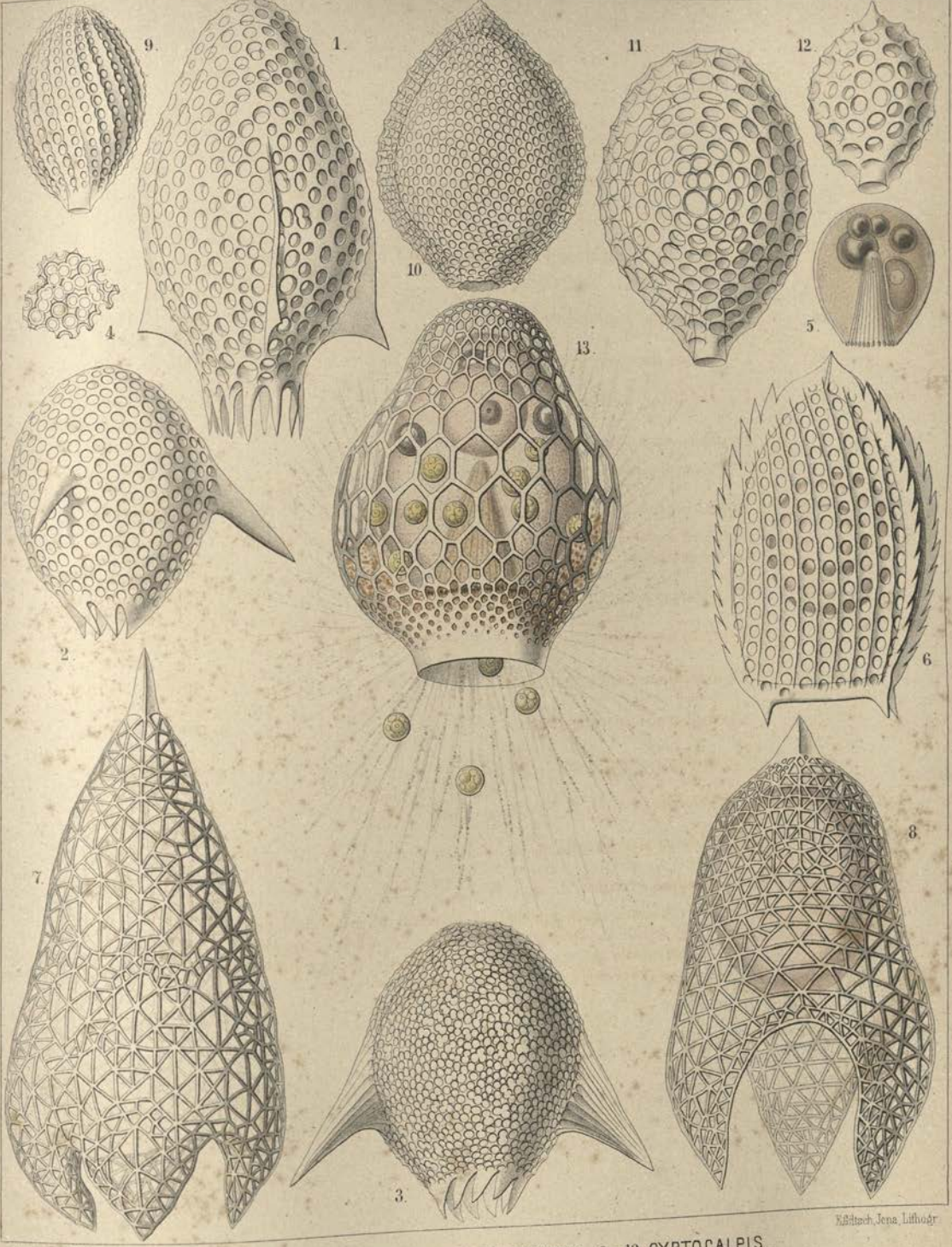
A group of confluent pores, more enlarged.

Fig. 5.	*Tripterocalpis ogmoptera*, n. sp., ...	× 300	1138

Central capsule. In the centre the striate podoconus, above it four oil-globules, to the right the nucleus.

Fig. 6.	*Tripocalpis triserrata*, n. sp., ...	× 600	1136
Fig. 7.	*Tridictyopus conicus*, n. sp., ...	× 300	1145
Fig. 8.	*Tridictyopus vatillum*, n. sp., ...	× 400	1145
Fig. 9.	*Cyrtophormis spiralis*, n. sp., ...	× 400	1166
Fig. 10.	*Archicorys ovata*, n. sp., ...	× 300	1185
Fig. 11.	*Cyrtocalpis gromia*, n. sp., ...	× 400	1188
Fig. 12.	*Archicorys microstoma*, n. sp., ...	× 400	1185
Fig. 13.	*Cyrtocalpis urceolus*, n. sp., ...	× 500	1186

The ovate central capsule exhibits in the lower half the podoconus, in the upper half the spherical nucleus and three oil-globules. Between the capsule and the shell numerous xanthellæ, partly protruded through the shell-mouth along the radiating pseudopodia.



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1-6. TRIPTEROCALPIS, 7.8. TRIDICTYOPUS, 9.-13. CYRTOCALPIS.

PLATE 52.

Legion NASSELLARIA.

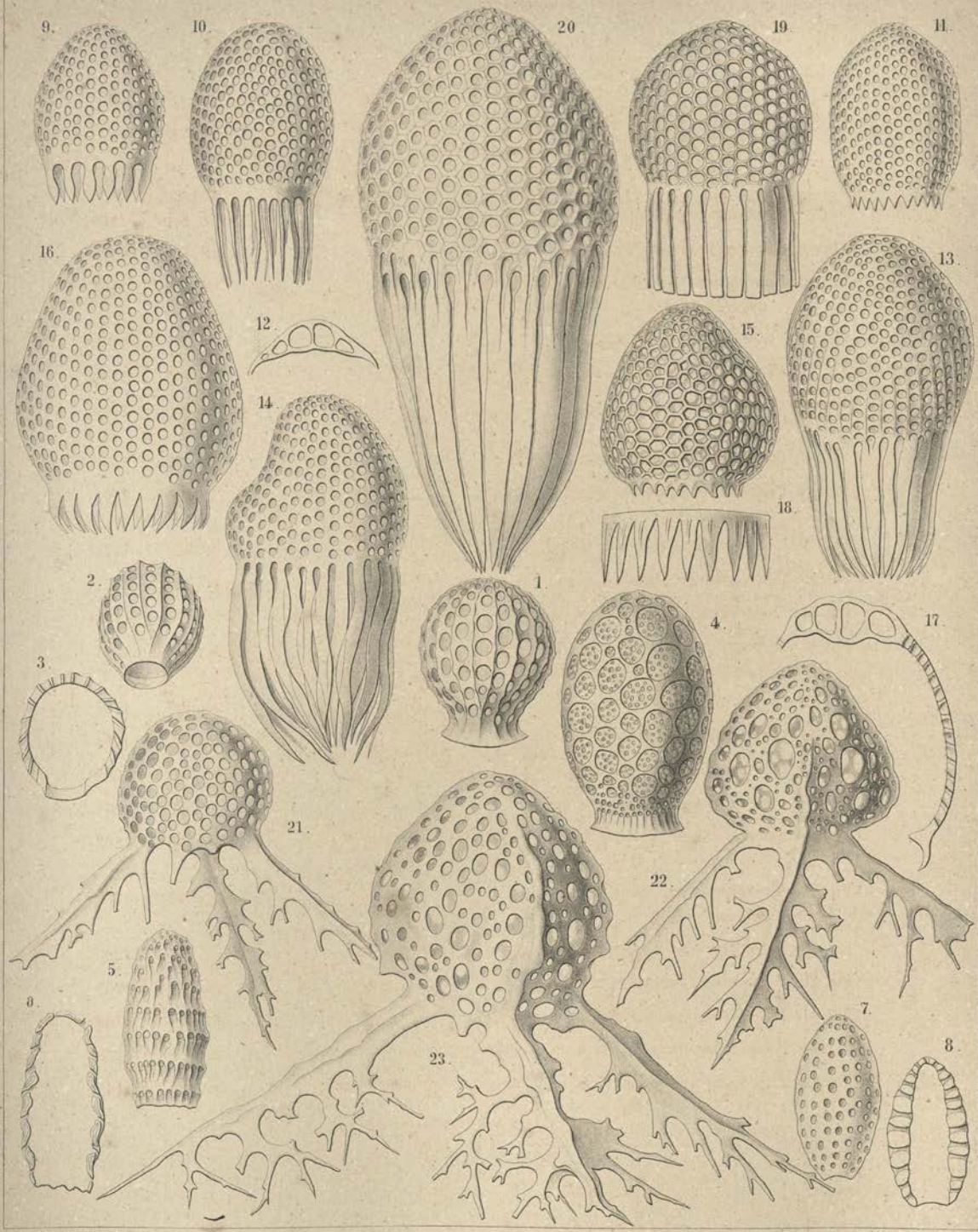
Order CYRTOIDEA.

Families TRIPOCALPIDA, PHÆNOCALPIDA, CYRTOCALPIDA et ANTHOCYRTIDA.

PLATE 52.

TRIPOCALPIDA, PHÆNOCALPIDA, CYRTOCALPIDA et ANTHOCYRTIDA.

	Diam.	Page
Fig. 1. *Cyrtophormis pila*, n. sp.,	× 300	1165
Fig. 2. *Cyrtophormis ærostatica*, n. sp.,	× 300	1166
Fig. 3. *Cyrtophormis ærostatica*, n. sp., Longitudinal section.	× 300	1166
Fig. 4. *Cyrtocalpis sethopora*, n. sp.,	× 600	1187
Fig. 5. *Cyrtocalpis lithomitra*, n. sp.,	× 400	1187
Fig. 6. *Cyrtocalpis lithomitra*, n. sp., Longitudinal section.	× 400	1187
Fig. 7. *Cyrtocalpis compacta*, n. sp.,	× 400	1187
Fig. 8. *Cyrtocalpis compacta*, n. sp., Longitudinal section.	× 400	1187
Fig. 9. *Carpocanistrum flosculum*, n. sp.,	× 400	1171
Fig. 10. *Carpocanistrum cephalum*, n. sp.,	× 300	1171
Fig. 11. *Carpocanistrum evacuatum*, n. sp.,	× 400	1172
Fig. 12. *Carpocanium verecundum*, n. sp., Vertical section through the top of the shell.	× 400	1284
Fig. 13. *Carpocanium verecundum*, n. sp.,	× 400	1284
Fig. 14. *Carpocanium irregulare*, n. sp.,	× 400	1284
Fig. 15. *Carpocanium hexagonale*, n. sp.,	× 400	1282
Fig. 16. *Carpocanium peristomium*, n. sp.,	× 500	1283
Fig. 17. *Carpocanium peristomium*, n. sp., Vertical section.	× 500	1283
Fig. 18. *Carpocanium trepanium*, n. sp., Peristome.	× 600	1282
Fig. 19. *Carpocanium petalospyris*, n. sp.,	× 300	1283
Fig. 20. *Carpocanium virgincum*, n. sp.,	× 600	1285
Fig. 21. *Tripodiscium sphærocephalum*, n. sp.,	× 400	1144
Fig. 22. *Tripodiscium tristylospyris*, n. sp. (vel *Tristylospyris tripodiscium*),	× 600	1143
Fig. 23. *Tripodiscium ramosum*, n. sp. (vel *Tristylospyris ramosa*),	× 600	1144



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1-8. CYRTOCALPIS. 9-20. CARPOCANIUM. 21-23. TRIPODISCIUM.

PLATE 53.

Legion NASSELLARIA.

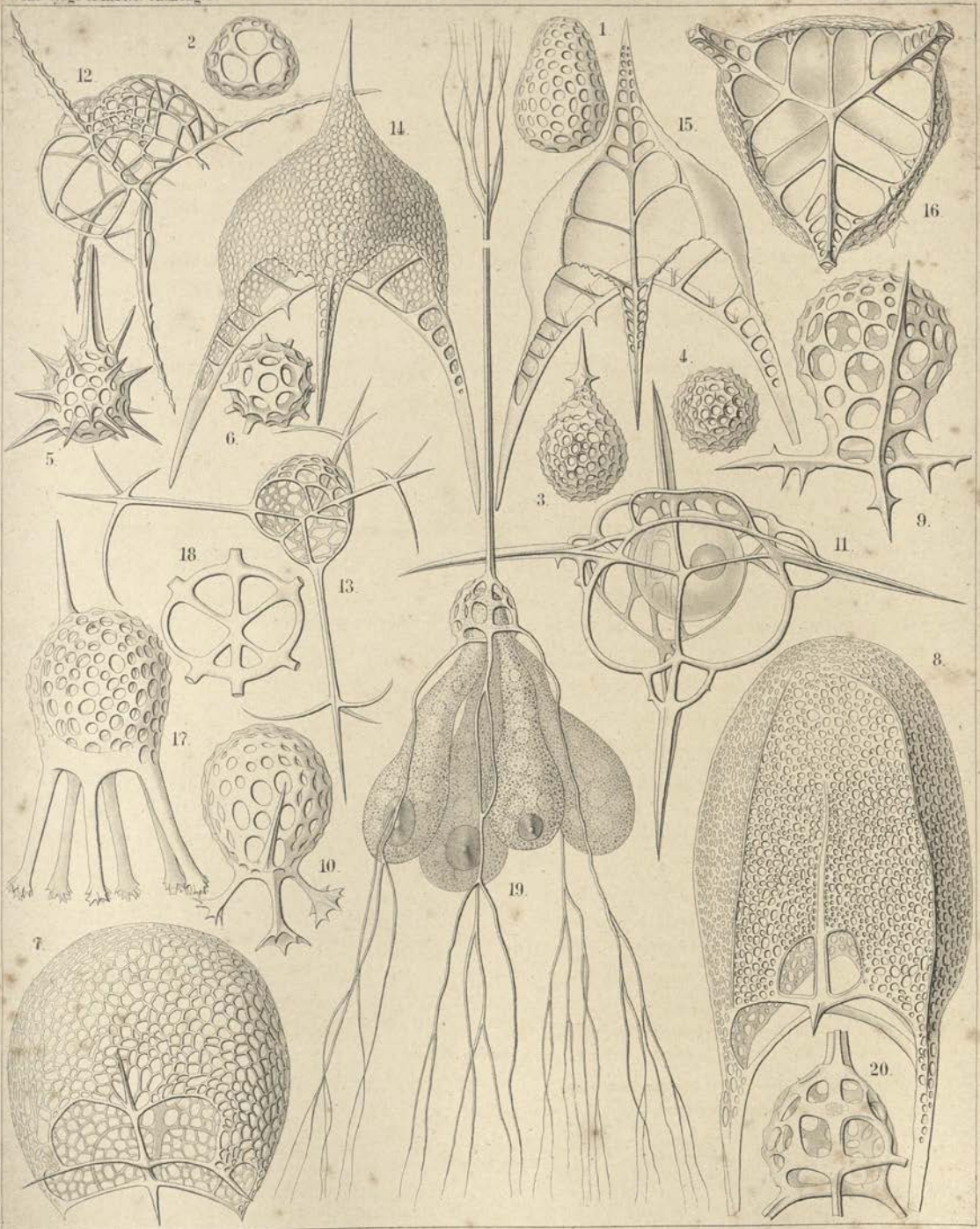
Orders SPYROIDEA ET CYRTOIDEA.

Families ZYGOSPYRIDA, TRIPOCALPIDA, PHÆNOCALPIDA et CYRTOCALPIDA.

PLATE 53.

Zygospyrida, Tripocalpida, Phænocalpida et Cyrtocalpida.

	Diam.	Page
Fig. 1. *Archicapsa triforis*, n. sp., Lateral view.	× 300	1191
Fig. 2. *Archicapsa triforis*, n. sp., Basal view.	× 300	1191
Fig. 3 *Halicapsa triglochin*, n. sp., Lateral view.	× 200	1190
Fig. 4. *Halicapsa triglochin*, n. sp., Basal view.	× 200	1191
Fig. 5. *Halicapsa hystrix*, n. sp., Lateral view.	× 200	1191
Fig. 6. *Halicapsa hystrix*, n. sp., Basal view.	× 200	1191
Fig. 7. *Cantharospyris platybursa*, n. sp. (vel *Platybursa compressa*),	× 400	1051
Fig. 8 *Tessarospyris clathrobursa*, n. sp. (vel *Clathrobursa dictyopus*),	× 400	1045
Fig 9. *Peridium spinipes*, n. sp.,	× 500	1154
Fig. 10. *Peridium palmipes*, n. sp.,	× 500	1154
Fig 11. *Archiscenium quadrispinum*, n. sp., In the spherical central capsule the dark nucleus is visible.	× 500	1150
Fig. 12. *Euscenium eucolpium*, n. sp.,	× 500	1147
Fig. 13. *Cladoscenium ancoratum*, n. sp.,	× 400	1149
Fig. 14. *Pteroscenium pinnatum*, n. sp., Lateral view.	× 400	1152
Fig. 15. *Pteroscenium pinnatum*, n. sp., Vertical section.	× 400	1152
Fig. 16. *Pteroscenium pinnatum*, n. sp., Basal view.	× 400	1152
Fig. 17. *Calpophœna hexarrhabda*, n. sp.,	× 400	1176
Fig. 18. *Calpophœna hexarrhabda*, n. sp., Basal plate.	× 400	1176
Fig. 19. *Tetraspyris tetracorethra*, n. sp., With the four-lobed central capsule, in each lobe an oil-globule.	× 400	1044
Fig. 20. *Tetraspyris tetracorethra*, n. sp., Shell more enlarged.	× 800	1044



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1. 2. ARCHICAPSA, 3-6. HALICAPSA, 7. PLATYBURSA,
8. CLATHROBURSA, 9. 10. ARCHIPERA, 11. 12. ARCHISCENIUM, 13. CLADOSCENIUM,
14-16. PTEROSCENIUM, 17. 18. ACROCORONA, 19. 20. TETRACORETHRA.

PLATE 54.

Legion NASSELLARIA.

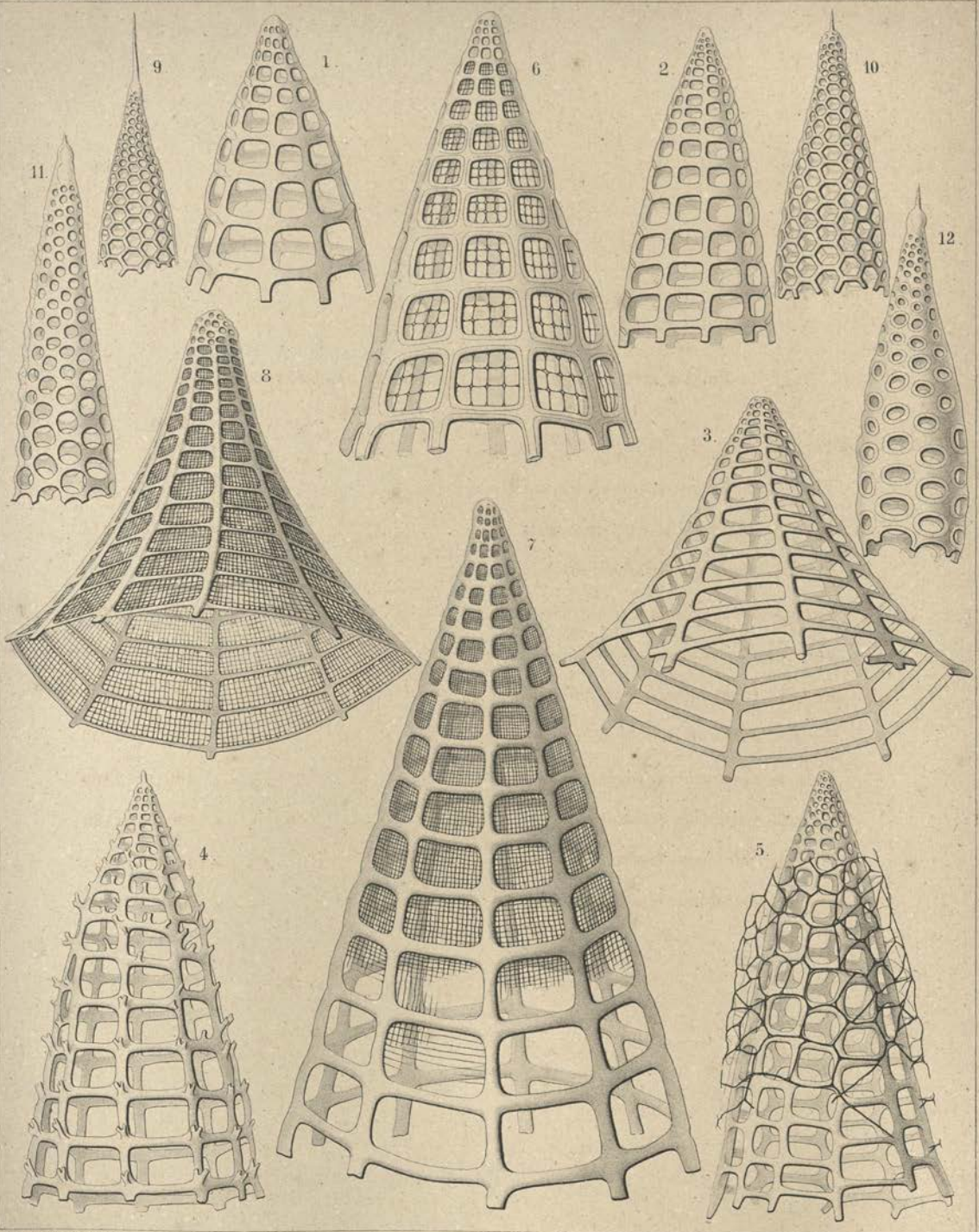
Order CYRTOIDEA.

Families PHÆNOCALPIDA, CYRTOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 54.

PHÆNOCALPIDA, CYRTOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

		Diam.	Page
Fig. 1.	*Bathropyramis quadrata*, n. sp.,	× 300	1159
Fig. 2.	*Sethopyramis quadrata*, n. sp.,	× 300	1254
Fig. 3.	*Bathropyramis trapezoides*, n. sp.,	× 300	1160
Fig. 4.	*Bathropyramis ramosa*, n. sp.,	× 300	1161
Fig. 5.	*Peripyramis circumtexta*, n. sp.,	× 300	1162
Fig. 6.	*Plectopyramis dodecomma*, n. sp.,	× 400	1258
Fig. 7.	*Cinclopyramis infundibulum*, n. sp.,	× 300	1161
Fig. 8.	*Plectopyramis trapezomma*, n. sp.,	× 400	1258
Fig. 9.	*Cornutella hexagona*, n. sp.,	× 400	1180
Fig. 10.	*Cornutella sethoconus*, n. sp.,	× 400	1180
Fig. 11.	*Sethoconus orthoceras*, n. sp.,	× 400	1294
Fig. 12.	*Sethoconus bimarginatus*, n. sp.,	× 400	1295



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1–4. BATHROPYRAMIS. 5. PERIPYRAMIS. 6–8. CINCLOPYRAMIS.
9–12. CORNUTELLA.

PLATE 55.

Legion NASSELLARIA.

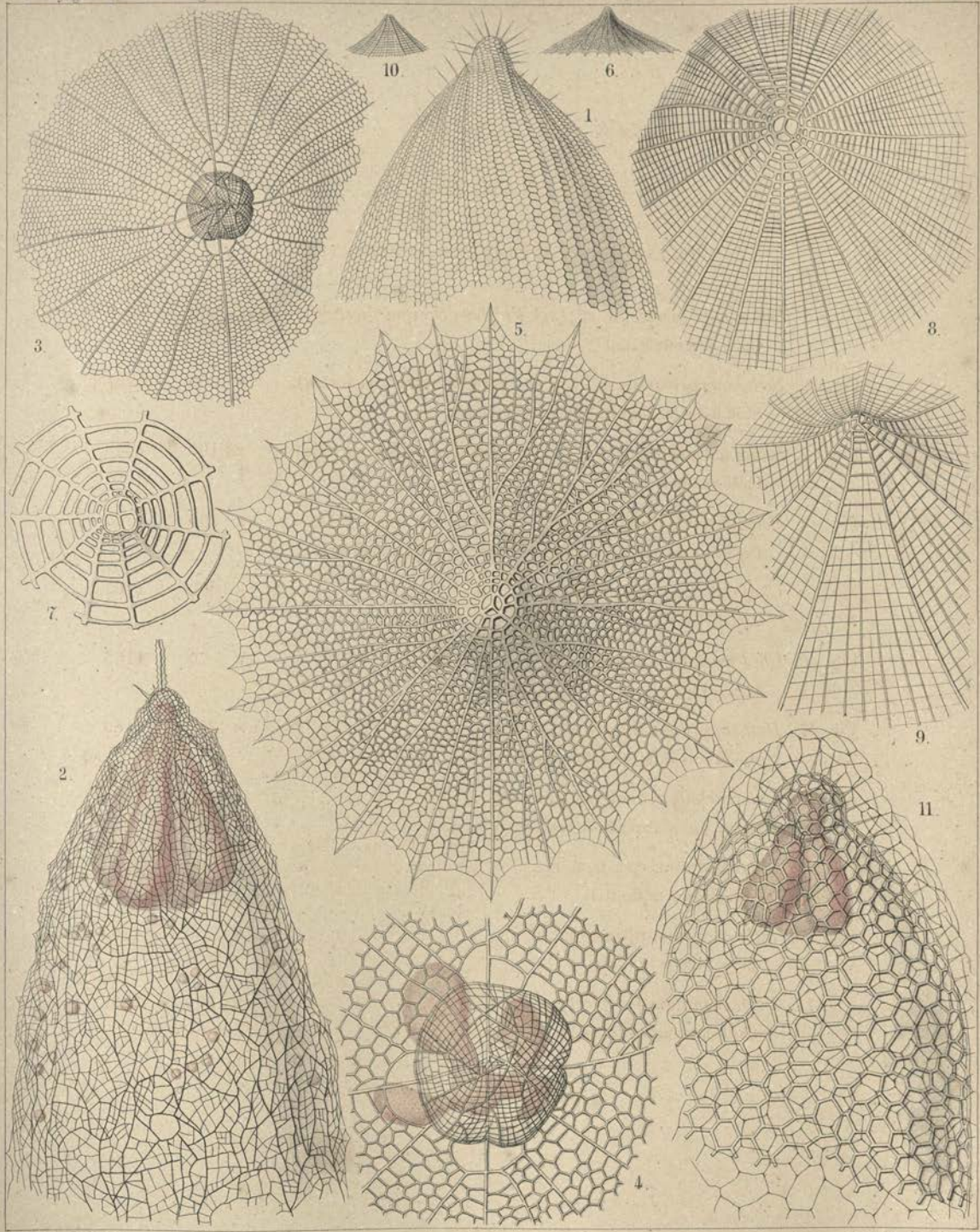
Order CYRTOIDEA.

Families PHÆNOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 55.

PHÆNOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

		Diam.	Page
Fig. 1.	*Sethoconus facetus*, n. sp. (vel *Phlebarachnium facetum*), . Upper part of the shell.	× 300	1296
Fig. 2.	*Sethoconus venosus*, n. sp. (vel *Phlebarachnium venosum*), . Shell including the four-lobed central capsule.	× 250	1297
Fig. 3.	*Sethophormis aurelia*, n. sp. (vel *Leptarachnium aurelia*), . Shell seen from above.	× 100	1248
Fig. 4.	*Sethophormis aurelia*, n. sp., ... Cephalis more enlarged, with the enclosed four-lobed central capsule.	× 400	1248
Fig. 5.	*Cladarachnium ramosum*, n. sp., . . . Apical view.	× 300	1165
Fig. 6.	*Cladarachnium ramosum*, n. sp., ... Lateral view.	× 70	1165
Fig. 7.	*Bathropyramis interrupta*, n. sp., ... Apical part of the shell, from above.	× 300	1160
Fig. 8.	*Litharachnium araneosum*, n. sp., ... Apical part of the shell, from above.	× 300	1163
Fig. 9.	*Litharachnium epeira*, n. sp., ... Oblique view of the shell.	× 500	1164
Fig. 10.	*Litharachnium araneosum*, n. sp., ... Lateral view.	× 50	1163
Fig. 11.	*Periarachnium periplectum*, n. sp., ... Shell enclosing the trilobed central capsule.	× 500	1297



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1. 2. PHLEBARACHNIUM. 3. 4. LEPTARACHNIUM. 5.-10. LITHARACHNIUM.
11. PERIARACHNIUM.

PLATE 56.

Legion NASSELLARIA.

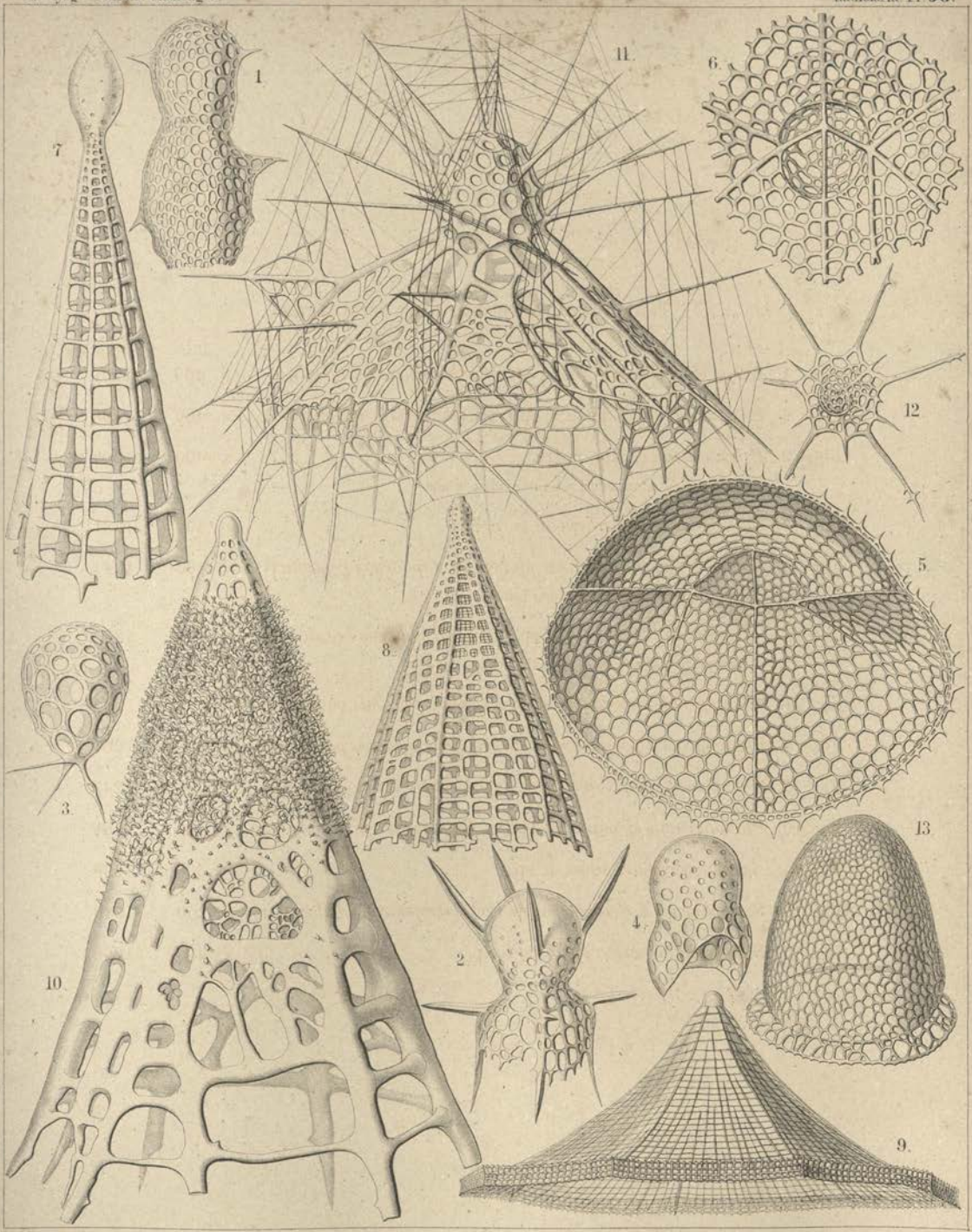
Order CYRTOIDEA.

Families TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 56.

TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

		Diam.	Page
Fig. 1.	*Lithomelissa bütschlii*, n. sp. (vel *Sethomelissa bütschlii*), .	× 400	1207
Fig. 2.	*Lithomelissa decacantha*, n. sp. (vel *Sethomelissa decacantha*),	× 400	1208
Fig. 3.	*Psilomelissa calvata*, n. sp., ... The cephalis alone, with the three collar beams.	× 400	1209
Fig. 4.	*Lychnodictyum scaphopodium*, n. sp., . . .	× 400	1231
Fig. 5.	*Sethophormis pentalactis*, n. sp. (vel *Pentaphormis pentalactis*), Oblique view of the shell, from below.	× 400	1244
Fig. 6.	*Sethophormis hexalactis*, n. sp. (vel *Hexaphormis hexalactis*), Central part of the shell, with the cortinar septum.	× 400	1245
Fig. 7.	*Sethopyramis enneactis*, n. sp. (vel *Cephalopyramis enneactis*),	× 400	1254
Fig. 8.	*Plectopyramis polypleura*, n. sp. (vel *Sethopyramis polypleura*),	× 200	1260
Fig. 9.	*Sethophormis eupilium*, n. sp. (vel *Craspedilium eupilium*),	× 400	1247
Fig. 10.	*Plectopyramis spongiosa*, n. sp. (vel *Spongopyramis spongiosa*),	× 400	1261
Fig. 11.	*Arachnocorys araneosa*, n. sp., ...	× 500	1266
Fig. 12.	*Sethophormis dodecaster*, n. sp. (vel *Astrophormis dodecaster*),	× 200	1248
Fig. 13.	*Sethocephalus eucecryphalus*, n. sp., . . .	× 400	1298



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1.2. SETHOMELISSA, 3.4. PSILOMELISSA, 5. PENTAPHORMIS, 6. HEXAPHORMIS,
7. CEPHALOPYRAMIS, 8.9. SETHOPYRAMIS, 10. PLECTOPYRAMIS,
11.12. ARACHNOCORYS, 13. SETHOCEPHALUS.

PLATE 57.

Legion NASSELLARIA.

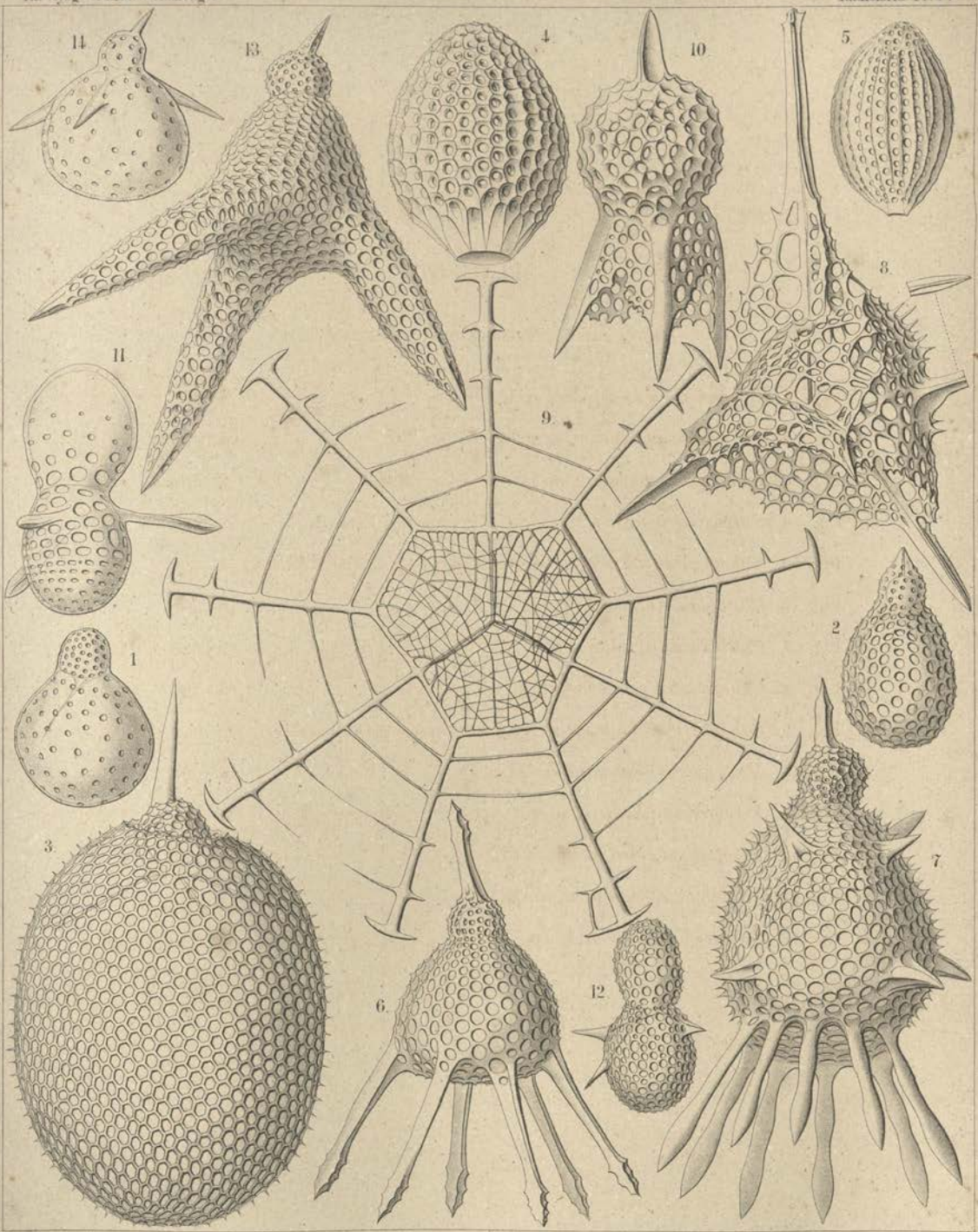
Order CYRTOIDEA.

Families TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 57.

TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

		Diam.	Page
Fig. 1.	*Dicolocapsa microcephala*, n. sp., ...	× 400	1312
Fig. 2.	*Sethocapsa pyriformis*, n. sp., ...	× 300	1310
Fig. 3.	*Lithopera ananassa*, n. sp., ...	× 500	1234
Fig. 4.	*Sethamphora favosa*, n. sp. (vel *Cryptoprora favosa*), .	× 400	1252
Fig. 5.	*Sethamphora microstoma*, n. sp. (vel *Cryptoprora microstoma*),	× 300	1252
Fig. 6.	*Clistophæna hexolena*, n. sp., ...	× 300	1287
Fig. 7.	*Clistophæna armata*, n. sp., ...	× 300	1288
Fig. 8.	*Clathromitra pterophormis*, n. sp., ...	× 400	1219
Fig. 9.	*Sethophormis rotula*, n. sp. (vel *Enneaphormis rotula*), .	× 400	1246
Fig. 10.	*Dictyophimus sphærocephalus*, n. sp., . . .	× 400	1195
Fig. 11.	*Peromelissa phalacra*, n. sp., ...	× 400	1236
Fig. 12.	*Peromelissa calva*, n. sp., ...	× 300	1237
Fig. 13.	*Sethochytris triconiscus*, n. sp., ...	× 300	1239
Fig. 14.	*Micromelissa bombus*, n. sp., ...	× 300	1235



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1. SETHOCAPSA, 2. 3. LITHOPERA, 4. 5. CRYPTOPRORA, 6. 7. SETHOPHATNA,
8. PTEROPHORMIS, 9. ENNEAPHORMIS, 10. DICTYOPHIMUS, 11. 12. PEROMELISSA,
13. SETHOCHYTRIS, 14. SETHOPERA.

PLATE 58.

Legion NASSELLARIA.

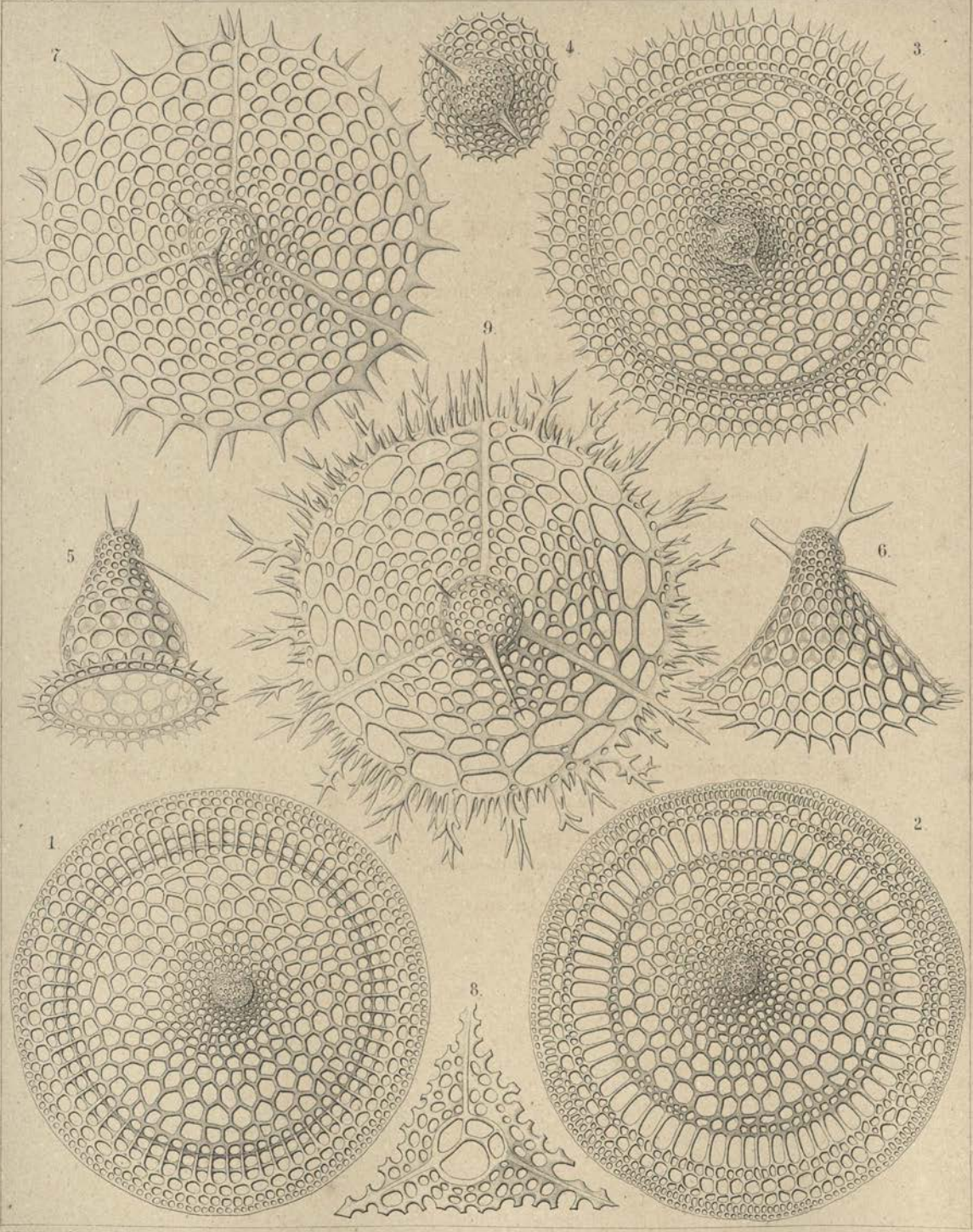
Order CYRTOIDEA.

Families TRIPOCYRTIDA, SETHOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

PLATE 58.

TRIPOCYRTIDA, SETHOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

		Diam.	Page
Fig. 1.	*Cecryphalium sestrodiscus*, n. sp., ... Apical view.	× 400	1399
Fig. 2.	*Cecryphalium lamprodiscus*, n. sp., ... Apical view.	× 400	1398
Fig. 3.	*Clathrocyclas coscinodiscus*, n. sp., ... Apical view.	× 400	1389
Fig. 4.	*Clathrocyclas coscinodiscus*, n. sp., ... The cephalis alone, with the two horns.	× 700	1389
Fig. 5.	*Clathrocyclas semeles*, n. sp., ... Lateral view.	× 400	1388
Fig. 6.	*Sethoconus capreolus*, n. sp., ... Lateral view.	× 400	1291
Fig. 7.	*Lampromitra quadricuspis*, n. sp., ... Apical view.	× 400	1214
Fig. 8.	*Lampromitra furcata*, n. sp., ... The collar septum after removal of the cephalis.	× 400	1215
Fig. 9.	*Lampromitra dendrocorona*, n. sp., ... Apical view.	× 400	1216



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1. 2. CECRYPHALIUM. 3.-6. EUCECRYPHALUS, 7-9. LAMPROMITRA.

PLATE 59.

Legion NASSELLARIA.

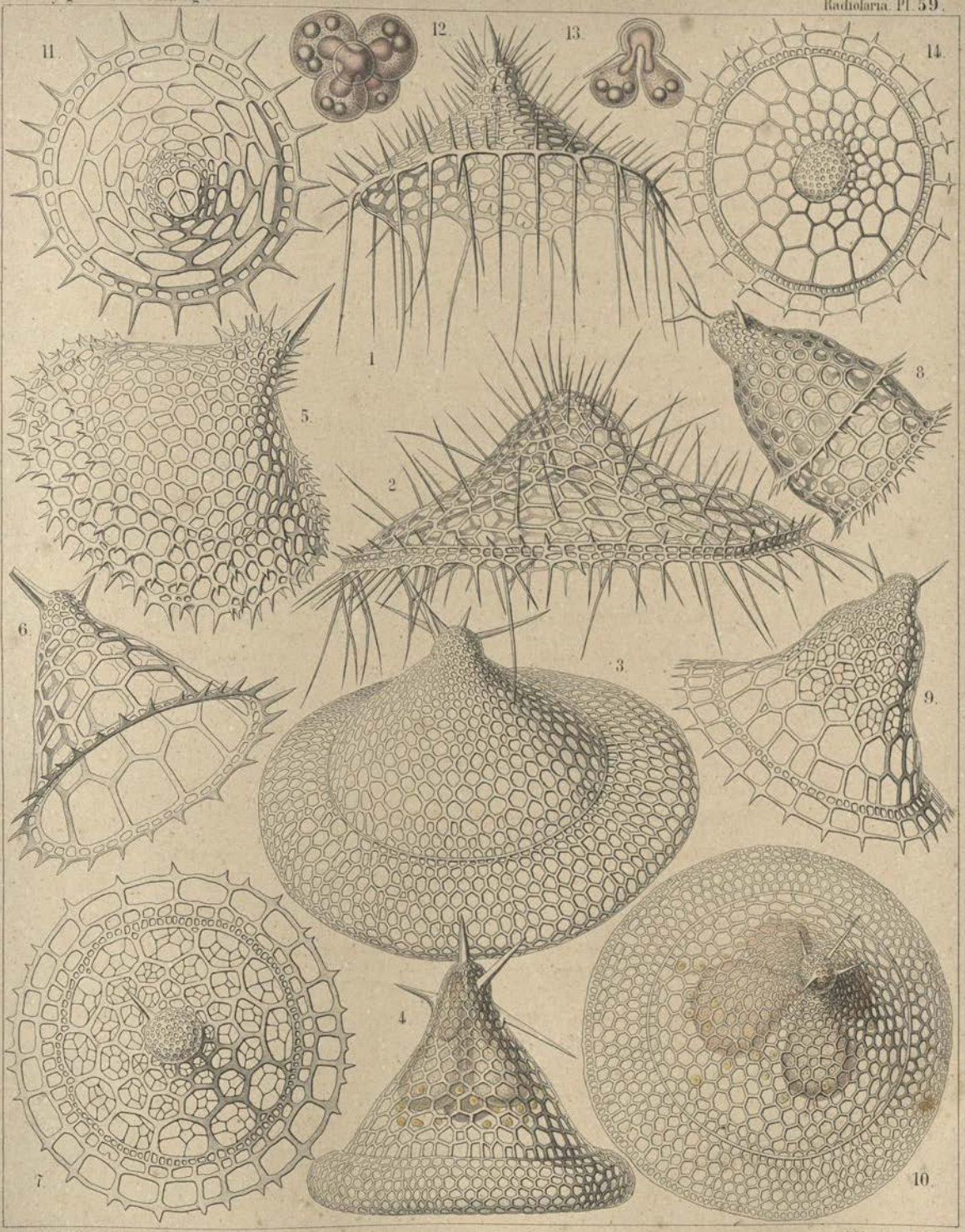
Order CYRTOIDEA.

Families TRIPOCYRTIDA, PODOCYRTIDA et PHORMOCYRTIDA.

PLATE 59.

TRIPOCYRTIDA, PODOCYRTIDA et PHORMOCYRTIDA.

		Diam.	Page
Fig. 1.	*Lampromitra huxleyi*, n. sp.,	× 400	1215
Fig. 2.	*Amphiplecta callistoma*, n. sp.,	× 400	1224
Fig. 3.	*Corocalyptra agnesæ*, n. sp,	× 400	1323
Fig. 4.	*Corocalyptra emmæ*, n. sp.,	× 400	1323
	The shell encloses the trilobate central capsule, with the trilobate nucleus.		
Fig. 5.	*Clathrocyclas cassiopejæ*, n. sp.,	× 400	1390
Fig. 6.	*Clathrocyclas alcmenæ*, n. sp.,	× 400	1388
Fig. 7.	*Clathrocyclas latonæ*, n. sp.,	× 400	1389
	Apical view.		
Fig. 8.	*Diplocyclas bicorona*, n. sp.,	× 400	1392
Fig. 9.	*Clathrocyclas ionis*, n. sp.,	× 400	1389
Fig. 10.	*Corocalyptra elisabethæ*, n. sp.,	× 400	1323
	Oblique apical view of the shell, with the quadrilobate central capsule enclosed.		
Fig. 11.	*Clathrocyclas europæ*, n. sp.,	× 400	1388
	Apical view of the shell, after removal of the cephalis.		
Fig. 12.	*Clathrocyclas europæ*, n. sp.,	× 400	1388
	Central capsule, seen from above, with the quadrilobate nucleus.		
Fig. 13.	*Clathrocyclas danaës*, n. sp.,	× 300	1388
	Vertical section through the cephalis and the quadrilobate central capsule, with the quadrilobate nucleus.		
Fig. 14.	*Clathrocyclas danaës*, n. sp.,	× 300	1388
	Apical view of the shell.		



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1-10. EUCECRYPHALUS, 11-14. CECRYPHALIUM.

PLATE 60.

Legion NASSELLARIA.

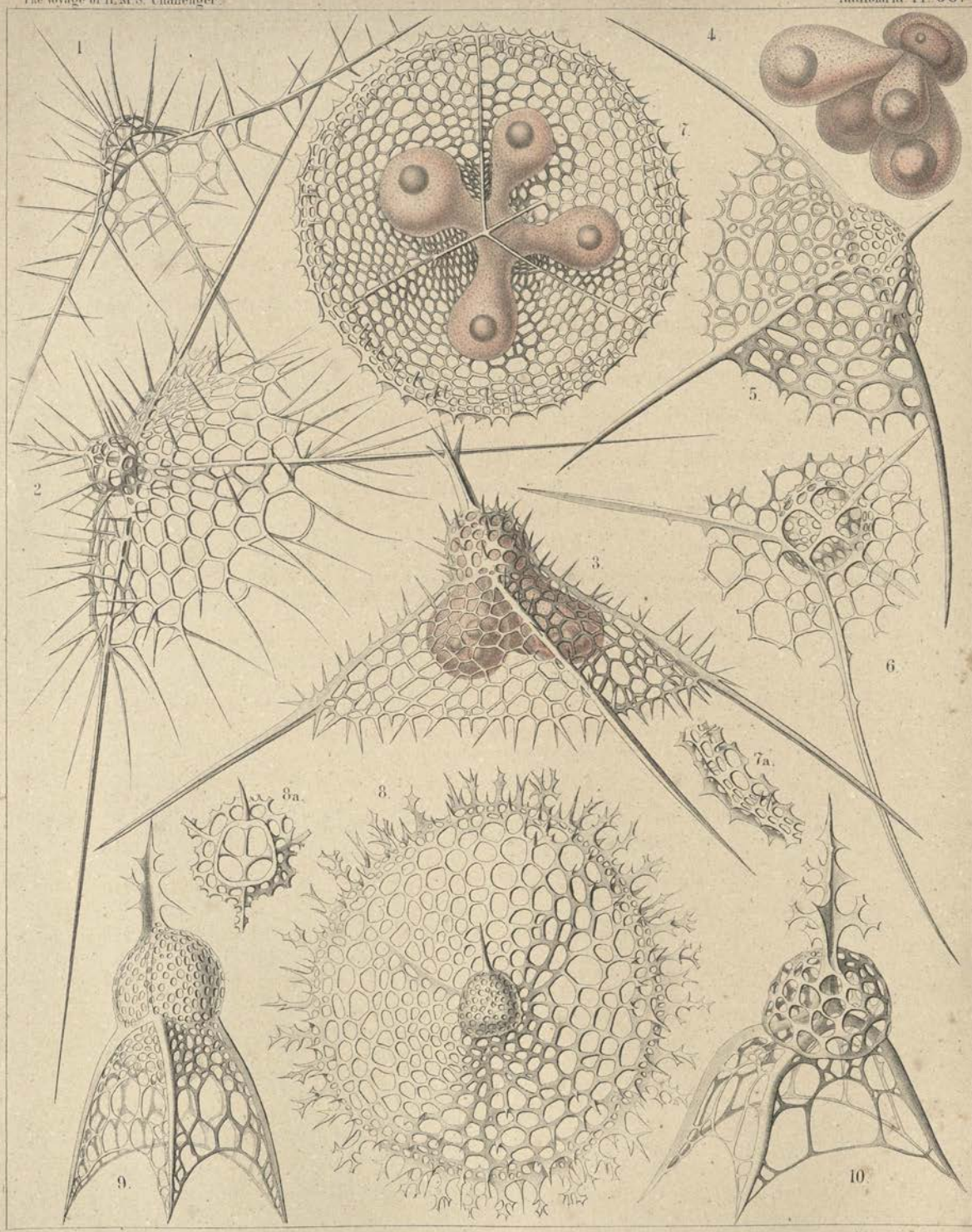
Order CYRTOIDEA.

Family TRIPOCYRTIDA.

PLATE 60.

TRIPOCYRTIDA.

		Diam.	Page
Fig. 1.	*Dictyophimus cienkowskii*, n. sp. (vel *Lamprotripus squarrosus*),	× 300	1200
	Shell seen from the side.		
Fig. 2.	*Dictyophimus bütschlii*, n. sp. (vel *Lamprotripus horridus*),	× 300	1201
Fig. 3.	*Dictyophimus hertwigii*, n. sp. (vel *Lamprotripus spinosus*),	× 400	1201
	The cephalis of the shell includes the central capsule, with three lobes depending in the pyramidal thorax.		
Fig. 4.	*Dictyophimus platycephalus*, n. sp.,	× 400	1198
	Central capsule with four thoracic lobes, each of which contains an oil-globule; kidney-shaped nucleus in the cephalic lobe.		
Fig. 5.	*Dictyophimus platycephalus*, n. sp.,	× 400	1198
	Shell seen from the side.		
Fig. 6.	*Dictyophimus brandtii*, n. sp.,	× 300	1198
	Shell seen from the base, with the four large pores of the collar septum, two minor jugular and two major cardinal pores.		
Fig. 7.	*Lampromitra coronata*, n. sp.,	× 400	1214
	Shell seen from below, with the quadrilobate central capsule.		
	Fig. 7*a*. A portion of the shell-margin,	× 800	1214
Fig. 8.	*Lampromitra arborescens*, n. sp.,	× 400	1216
	Shell from above.		
	Fig. 8*a*. The collar septum with the four crossed rods of the cortina,	× 400	1216
Fig. 9.	*Tripocyrtis plectaniscus*, n. sp.,	× 400	1202
Fig. 10.	*Tripocyrtis plagoniscus*, n. sp.,	× 400	1201



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1 - 6. LAMPROTRIPUS, 7 - 10. LAMPROMITRA.

PLATE 61.

Legion NASSELLARIA.

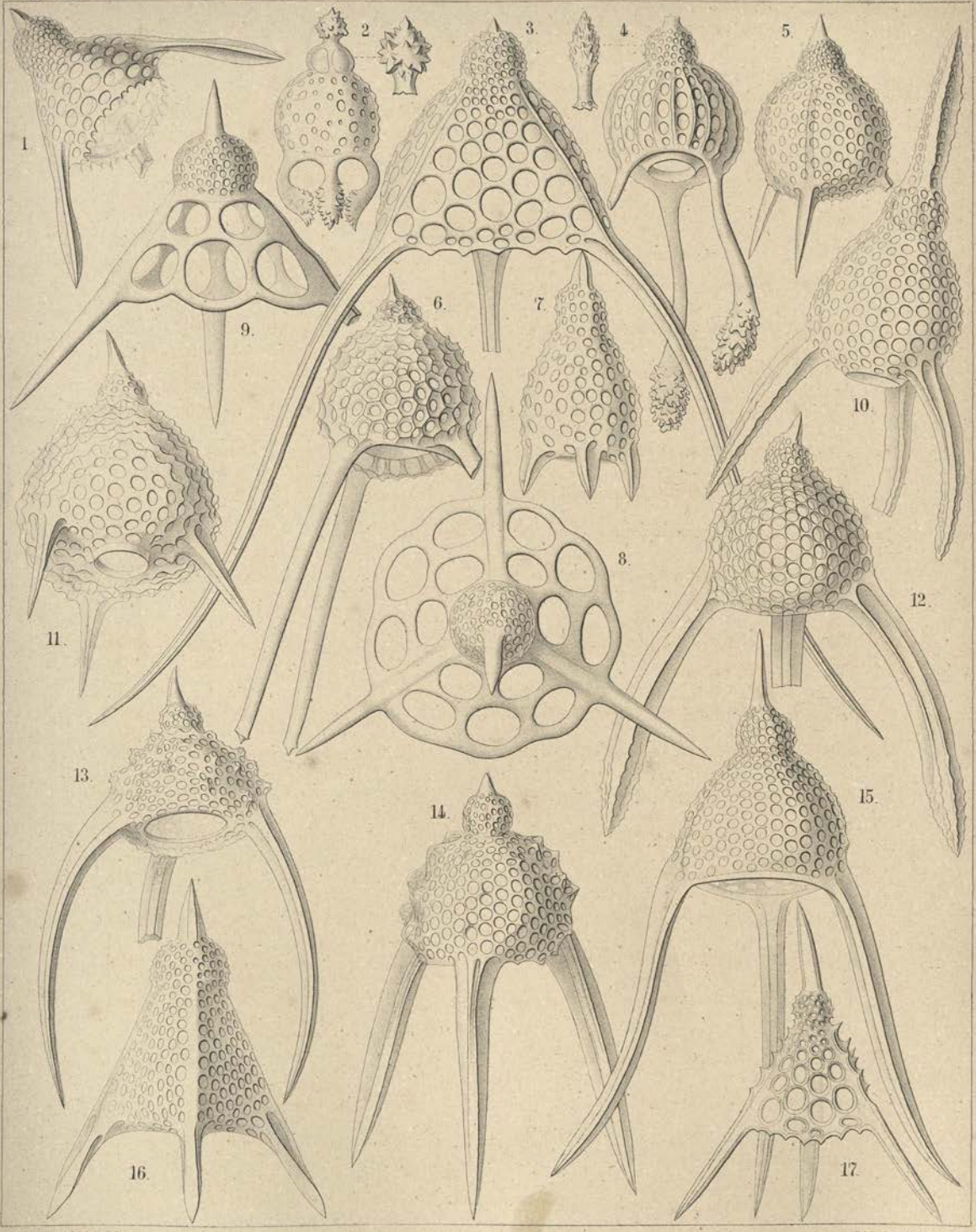
Order CYRTOIDEA.

Family TRIPOCYRTIDA.

PLATE 61.

TRIPOCYRTIDA

		Diam.	Page
Fig. 1.	*Dictyophimus cortina*, n. sp.,	× 400	1197
Fig. 2.	*Lychnocanium pudicum*, n. sp.,	× 200	1230
Fig. 3.	*Dictyophimus longipes*, n. sp.,	× 400	1197
Fig. 4.	*Lychnocanium clavigerum*, n. sp.,	× 300	1230
Fig. 5.	*Dictyophimus lasanum*, n. sp.,	× 300	1197
Fig. 6.	*Lychnocanium favosum*, n. sp.,	× 300	1225
Fig. 7.	*Lychnocanium lanterna*, n. sp.,	× 300	1224
Fig. 8.	*Dictyophimus plectaniscus*, n. sp., Apical view.	× 300	1196
Fig. 9.	*Dictyophimus plectaniscus*, n. sp., Lateral view.	× 300	1196
Fig. 10.	*Lychnocanium fenestratum*, n. sp.,	× 400	1228
Fig. 11.	*Lychnocanium pyriforme*, n. sp.,	× 300	1225
Fig. 12.	*Lychnocanium fortipes*, n. sp.,	× 300	1227
Fig. 13.	*Lychnocanium tuberosum*, n. sp.,	× 300	1227
Fig. 14.	*Lychnocanium nodosum*, n. sp.,	× 300	1225
Fig. 15.	*Lychnocanium sigmopodium*, n. sp.,	× 400	1228
Fig. 16.	*Dictyophimus pyramis*, n. sp.,	× 300	1196
Fig. 17.	*Dictyophimus triserratus*, n. sp.,	× 300	1200



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LYCHNOCANIUM

PLATE 62.

Legion NASSELLARIA.

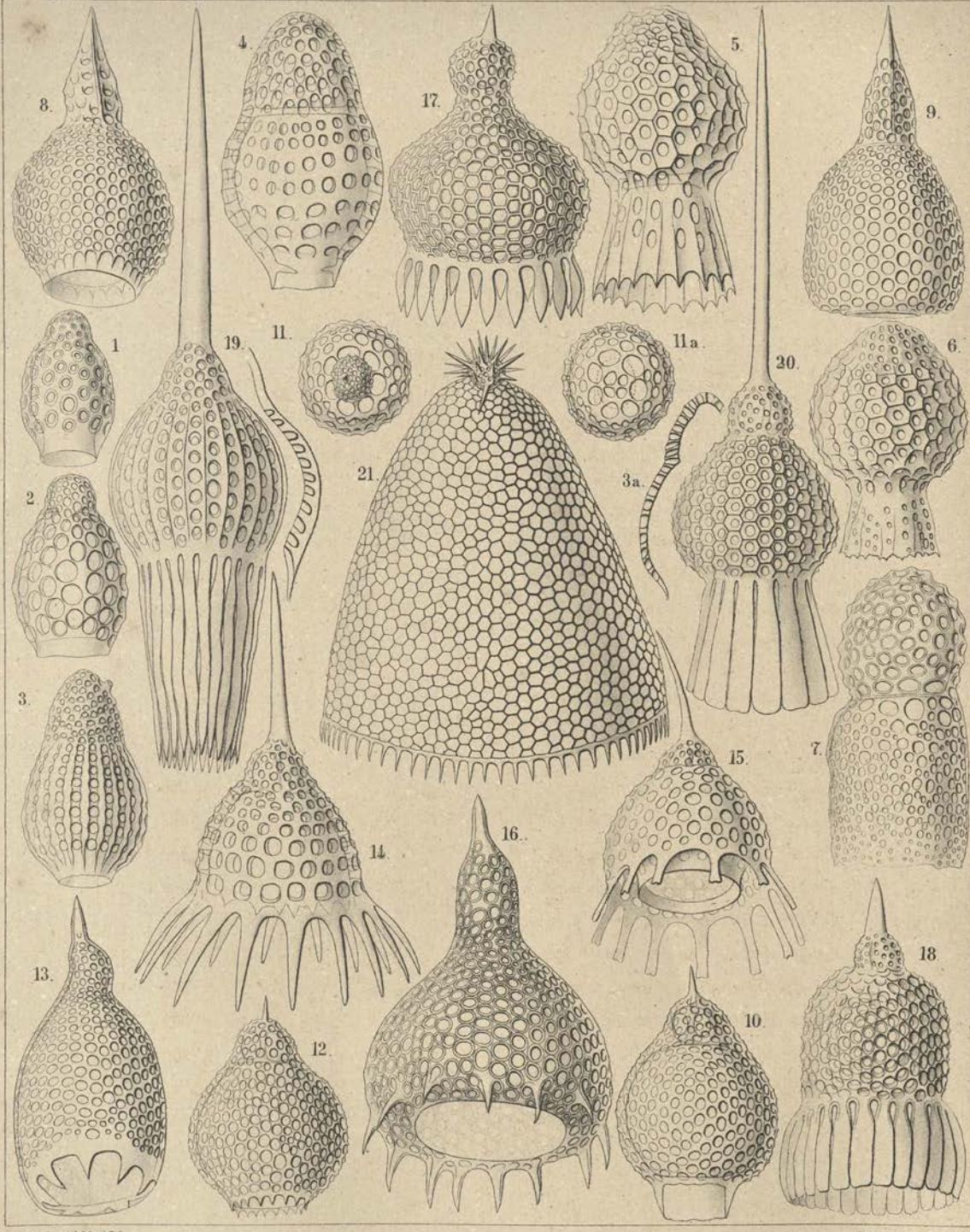
Order CYRTOIDEA.

Families ANTHOCYRTIDA, SETHOCYRTIDA et PHORMOCYRTIDA.

PLATE 62.

ANTHOCYRTIDA, SETHOCYRTIDA et PHORMOCYRTIDA

		Diam.	Page
Fig. 1.	*Dictyocephalus australis*, n. sp.,	× 300	1306
Fig. 2.	*Dictyocephalus mediterraneus*, n. sp.,	× 300	1307
Fig. 3.	*Sethamphora costata*, n. sp. (vel *Dictyocephalus costatus*),	× 300	1251
Fig. 4.	*Dictyocephalus amphora*, n. sp.,	× 400	1305
Fig. 5.	*Cycladophora (?) favosa*, n. sp. (an *Dictyocephalus ?*),	× 400	1380
Fig. 6.	*Cycladophora (?) favosa*, n. sp. (an *Dictyocephalus ?*), A variety with obliterated ribs (?).	× 400	1380
Fig. 7.	*Dictyocephalus globiceps*, n. sp.,	× 400	1308
Fig. 8.	*Sethocorys achillis*, n. sp.,	× 400	1301
Fig. 9.	*Sethocyrtis oxycephalis*, n. sp.,	× 400	1299
Fig. 10.	*Sethocorys odysseus*, n. sp.,	× 400	1302
Fig. 11.	*Sethocyrtis agamemnonis*, n. sp., Seen from above (apical view).	× 300	1300
Fig. 11A.	*Sethocyrtis agamemnonis*, n. sp., Seen from above, after removal of the cephalis.	× 300	1300
Fig. 12.	*Anthocyrtium pyrum*, n. sp.,	× 400	1276
Fig. 13.	*Anthocyrtis ovata*, n. sp.,	× 300	1272
Fig. 14.	*Anthocyrtium chrysanthemum*, n. sp.	× 400	1272
Fig. 15.	*Anthocyrtidium ligularia*, n. sp.,	× 400	1278
Fig. 16.	*Anthocyrtidium cineraria*, n. sp.,	× 400	1278
Fig. 17.	*Anthocyrtium campanula*, n, sp.,	× 400	1274
Fig. 18.	*Anthocyrtium doronicum*, n, sp.,	× 300	1276
Fig. 19.	*Anthocyrtium flosculus*, n. sp.,	× 300	1277
Fig. 20.	*Anthocyrtium adonis*, n. sp.,	× 300	1273
Fig. 21.	*Sethoconus anthocyrtis*, n. sp. (vel *Anthocyrtium sethoconium*),	× 300	1296



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1-7. DICTYOCEPHALUS, 8.-11. LOPHOPHAENA, 12.-21. ANTHOCYRTIS.

PLATE 63.

Legion NASSELLARIA.

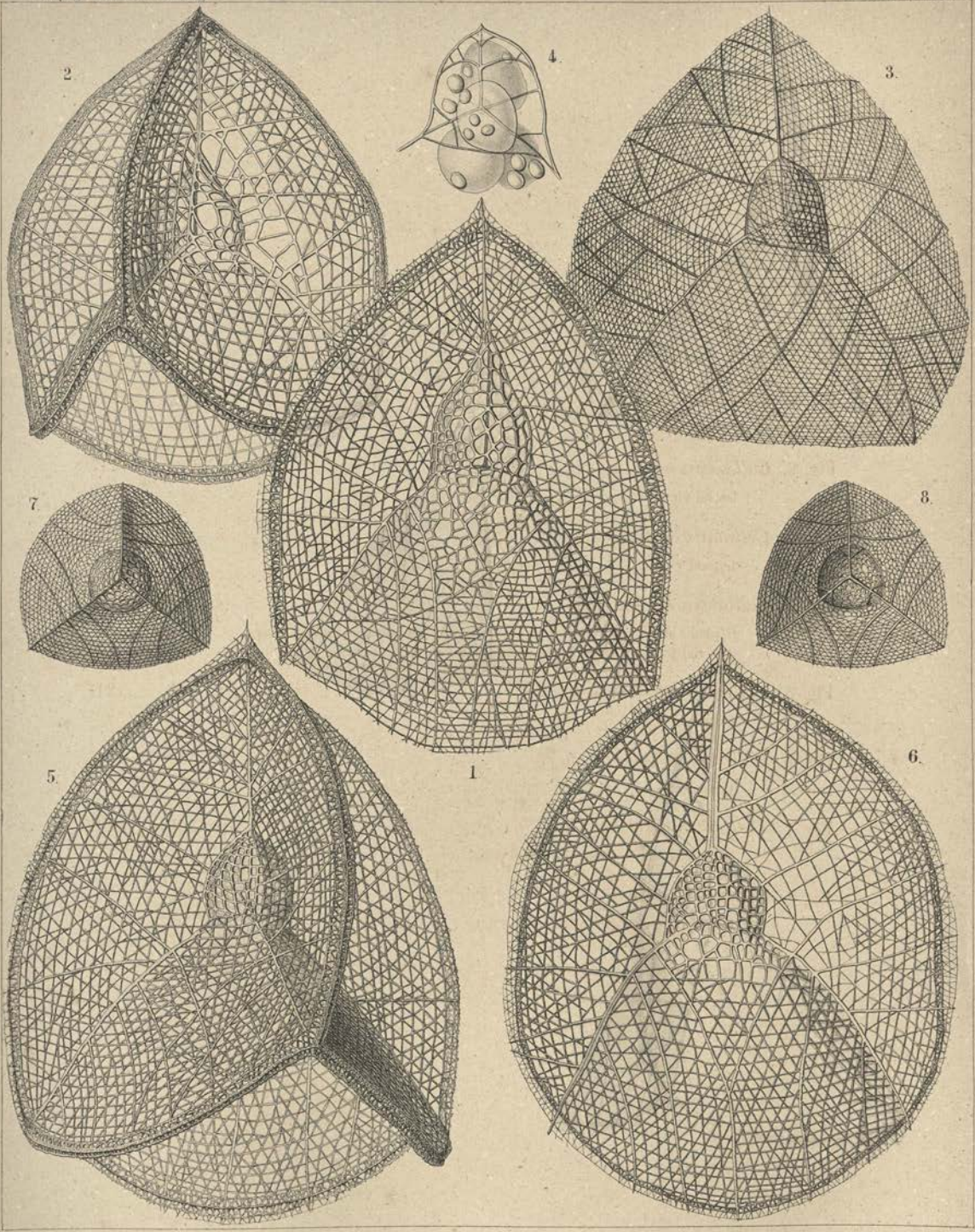
Order CYRTOIDEA.

Family TRIPOCYRTIDA.

PLATE 63.

TRIPOCYRTIDA.

		Diam.	Page
Fig. 1.	*Callimitra carolotæ*, n. sp., ...	× 400	1217
	Lateral view.		
Fig. 2.	*Callimitra annæ*, n. sp., ...	× 400	1217
	Dorsal view.		
Fig. 3.	*Callimitra emmæ*, n. sp., ...	× 300	1218
	Lateral view.		
Fig. 4.	*Callimitra emmæ*, n. sp., ...	× 400	1218
	Cephalis alone, with the enclosed four-lobed central capsule, and the internal four divergent beams; surrounded by some scattered xanthellæ.		
Fig. 5.	*Callimitra agnesæ*, n. sp., ...	× 400	1217
	Dorsal view.		
Fig. 6.	*Callimitra elisabethæ*, n. sp., ...	× 400	1218
	Lateral view.		
Fig. 7.	*Callimitra carolotæ*, n. sp., ...	× 200	1217
	Seen from above (from the apical pole).		
Fig 8.	*Callimitra carolotæ*, n. sp., ...	× 200	1217
	Seen from below (from the basal pole).		



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CALLIMITRA.

PLATE 64.

Legion NASSELLARIA.

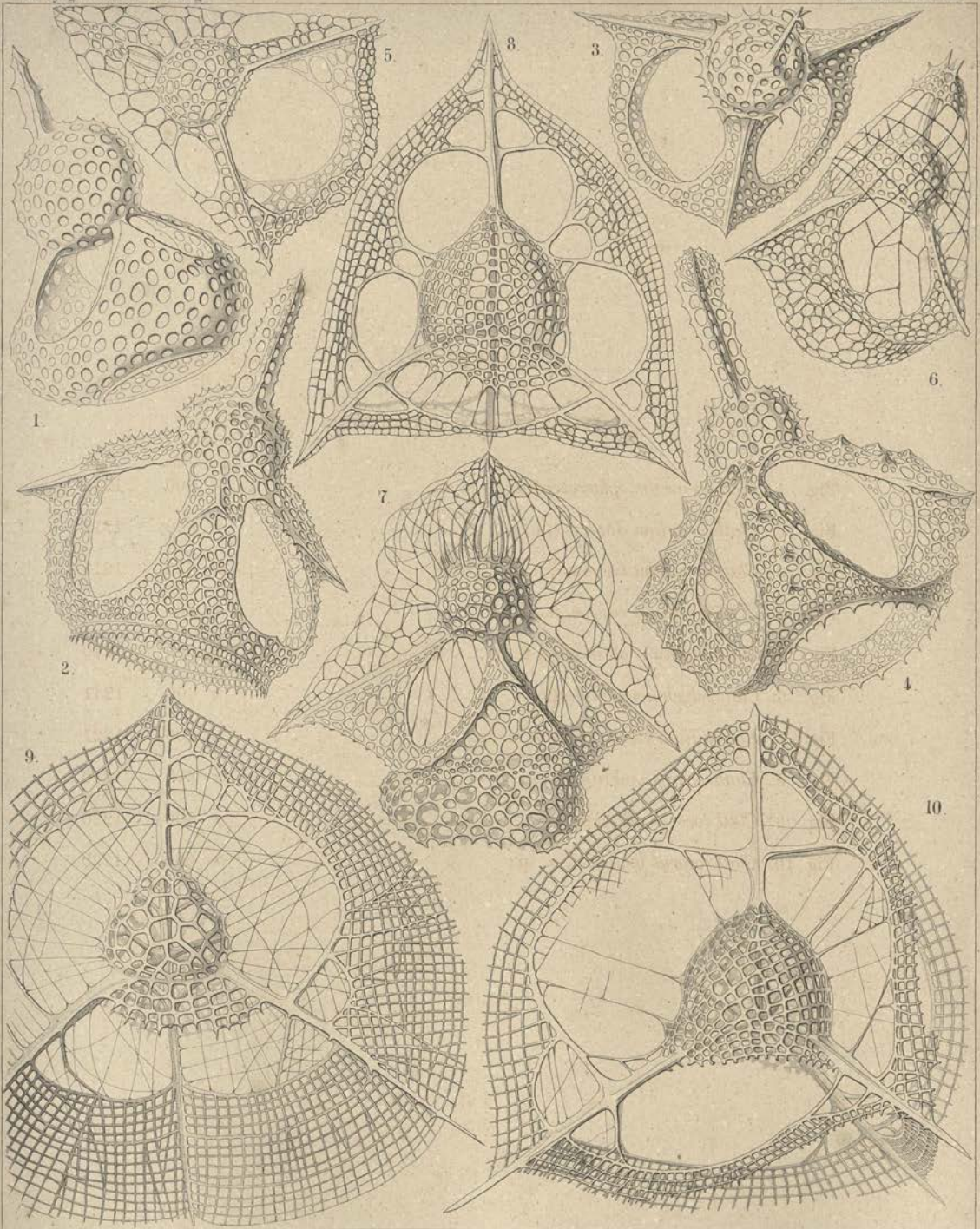
Order CYRTOIDEA.

Families TRIPOCYRTIDA et PODOCYRTIDA.

PLATE 64.

TRIPOCYRTIDA et PODOCYRTIDA.

		Diam.	Page
Fig. 1.	*Clathrocanium sphærocephalum*, n. sp.,	× 600	1211
Fig. 2.	*Clathrocanium diadema*, n. sp.,	× 600	1212
Fig. 3.	*Clathrocanium triomma*, n. sp.,	× 600	1211
Fig. 4.	*Clathrocanium reginæ*, n. sp.,	× 600	1212
Fig. 5.	*Clathrolychnus araneosus*, n. sp.,	× 600	1240
Fig. 6.	*Clathrolychnus periplectus*, n. sp.,	× 600	1241
Fig. 7.	*Pteropilium clathrocanium*, n. sp.,	× 400	1327
Fig. 8.	*Clathrocorys murrayi*, n. sp.,	× 600	1219
Fig. 9.	*Clathrocorys giltschii*, n. sp.,	× 600	1220
Fig. 10.	*Clathrocorys teuscheri*, n. sp.,	× 600	1220



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1–4. CLATHROCANIUM. 5–7. CLATHROLYCHNUS. 8–10. CLATHROCORYS.

PLATE 65.

Legion NASSELLARIA.

Order CYRTOIDEA.

Family PHORMOCYRTIDA.

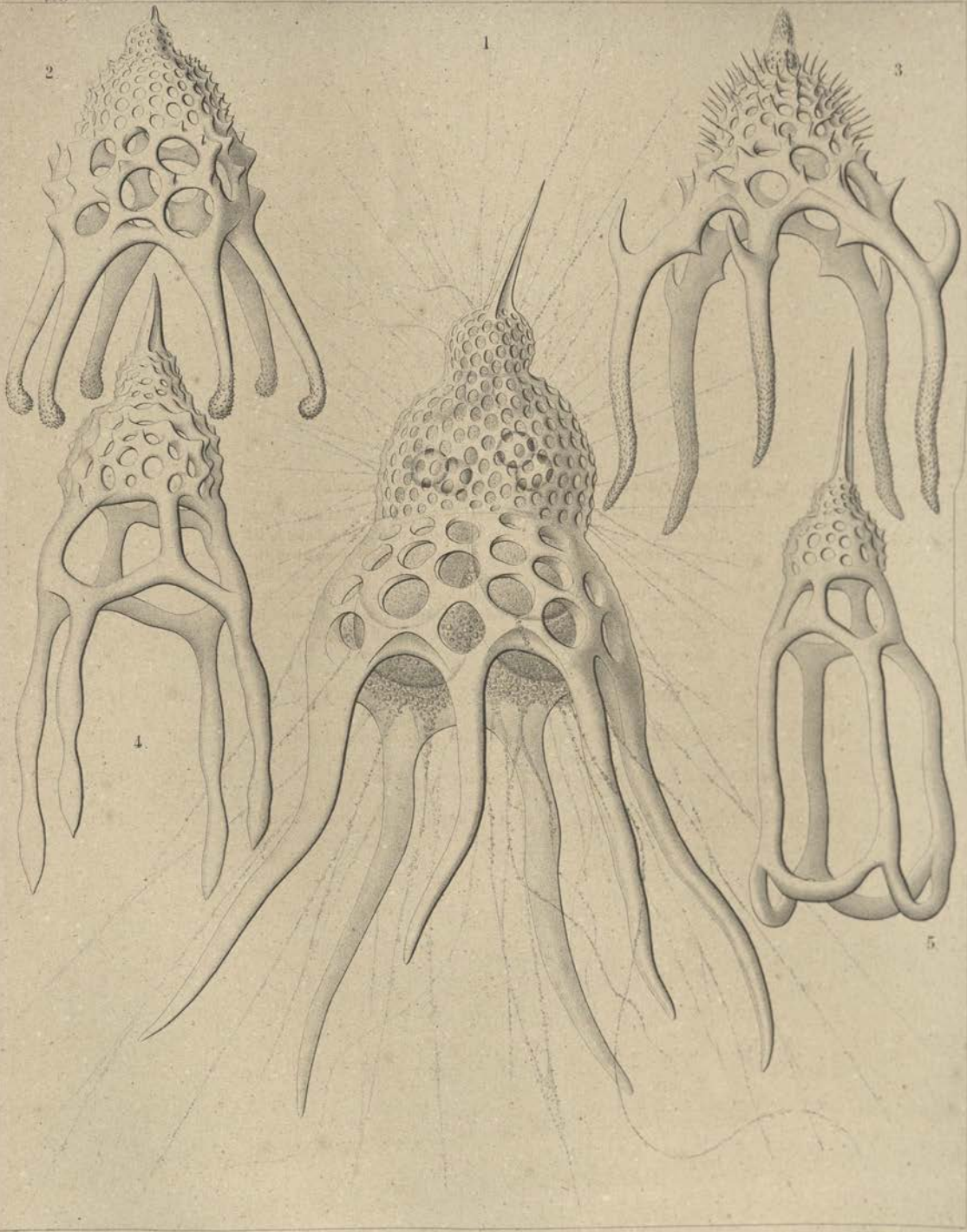
PLATE 65.

PHORMOCYRTIDA.

		Diam.	Page
Fig. 1.	*Alacorys friderici*, n. sp. (vel *Hexalacorys friderici*), .	× 400	1372

The central capsule, enclosed in the fenestrated shell, exhibits in its lower half four large club-shaped lobes, each of which includes in its upper part a large oil-globule. The uppermost, undivided part of the capsule includes the nucleus, which protrudes four small nuclear lobes through the four holes of the cortinar septum into the thorax. Numerous long pseudopodia arise from the granular sarcomatrix, which the capsule surrounds, and pass through the pores of the siliceous shell.

Fig. 2.	*Alacorys guilelmi*, n. sp. (vel *Hexalacorys guilelmi*), .	× 300	1372
Fig. 3.	*Alacorys bismarckii*, n. sp. (vel *Pentalacorys bismarckii*), .	× 200	1372
Fig. 4.	*Alacorys lutheri*, n. sp. (vel *Tetralacorys lutheri*), . .	× 400.	1370
Fig. 5.	*Cycladophora goetheana*, n. sp. (vel *Lampterium goetheanum*),	× 300	1376



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1 2 HEXALACORYS, 3 PENTALACORYS, 4 TETRALACORYS,
5 THEOPHORMIS

PLATE 66.

Legion NASSELLARIA.

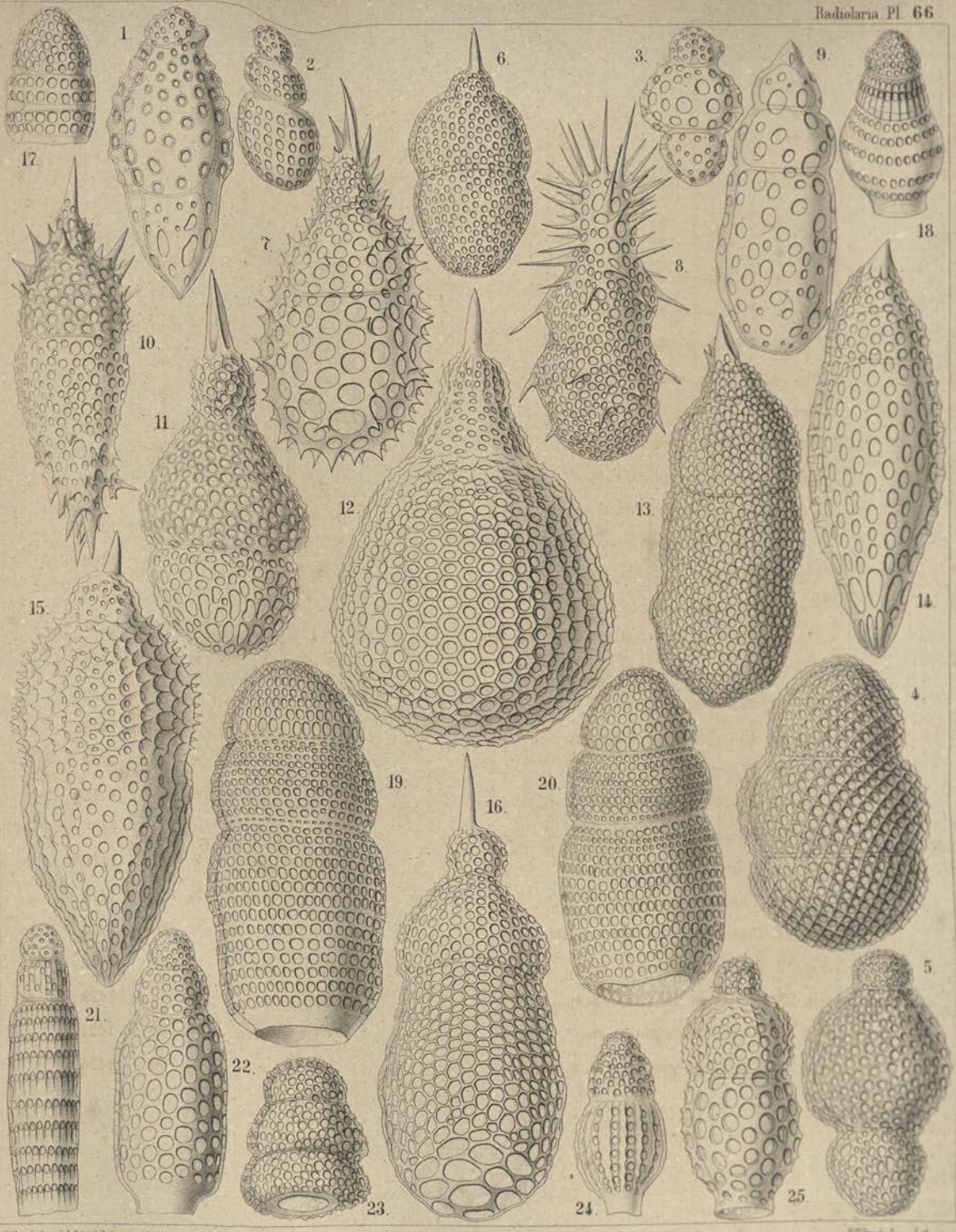
Order CYRTOIDEA.

Family THEOCYRTIDA.

PLATE 66.

THEOCYRTIDA.

		Diam.	Page
Fig. 1.	*Tricolocapsa theophrasti*, n. sp.,	× 400	1432
Fig. 2.	*Tricolocapsa schleidenii*, n. sp.,	× 300	1433
Fig. 3.	*Tricolocapsa discoridis*, n. sp.,	× 300	1432
Fig. 4.	*Tricolocapsa decandollei*, n. sp.,	× 300	1433
Fig. 5.	*Tricolocapsa linnæi*, n. sp.,	× 400	1432
Fig. 6.	*Theocapsa aristotelis*, n. sp.,	× 300	1427
Fig. 7.	*Theocapsa mülleri*, n. sp.,	× 400	1431
Fig. 8.	*Theocapsa democriti*, n. sp.,	× 400	1427
Fig. 9.	*Theocapsa forskalii*, n. sp.,	× 400	1429
Fig. 10.	*Theocapsa cuvieri*, n. sp.,	× 400	1430
Fig. 11.	*Theocapsa wottonis*, n. sp.,	× 400	1428
Fig. 12.	*Theocapsa darwinii*, n. sp.,	× 300	1431
Fig. 13.	*Theocapsa linnæi*, n. sp.,	× 400	1429
Fig. 14.	*Theocapsa wolffii*, n. sp.,	× 400	1429
Fig. 15.	*Theocapsa malpighii*, n. sp.,	× 400	1428
Fig. 16.	*Theocapsa lamarckii*, n. sp.,	× 400	1430
Fig. 17.	*Tricolocampe amphizona*, n. sp.,	× 400	1413
Fig. 18.	*Theocampe collaris*, n. sp.,	× 300	1425
Fig. 19.	*Tricolocampe polyzona*, n. sp.,	× 400	1412
Fig. 20.	*Tricolocampe stenozona*, n. sp.,	× 400	1413
Fig. 21.	*Tricolocampe cylindrica*, n. sp.,	× 300	1412
Fig. 22.	*Tricolocampe urnula*, n. sp.,	× 400	1422
Fig. 23.	*Theocampe stenostoma*, n. sp.,	× 300	1423
Fig. 24.	*Theocampe costata*, n. sp.,	× 300	1424
Fig. 25.	*Theocampe sphærothorax*, n. sp.,	× 300	1424



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1-5. TRICOLOCAPSA. 6.-16. TRICOLOPERA. 17.-25. TRICOLOCAMPE.

PLATE 67.

Legion NASSELLARIA.

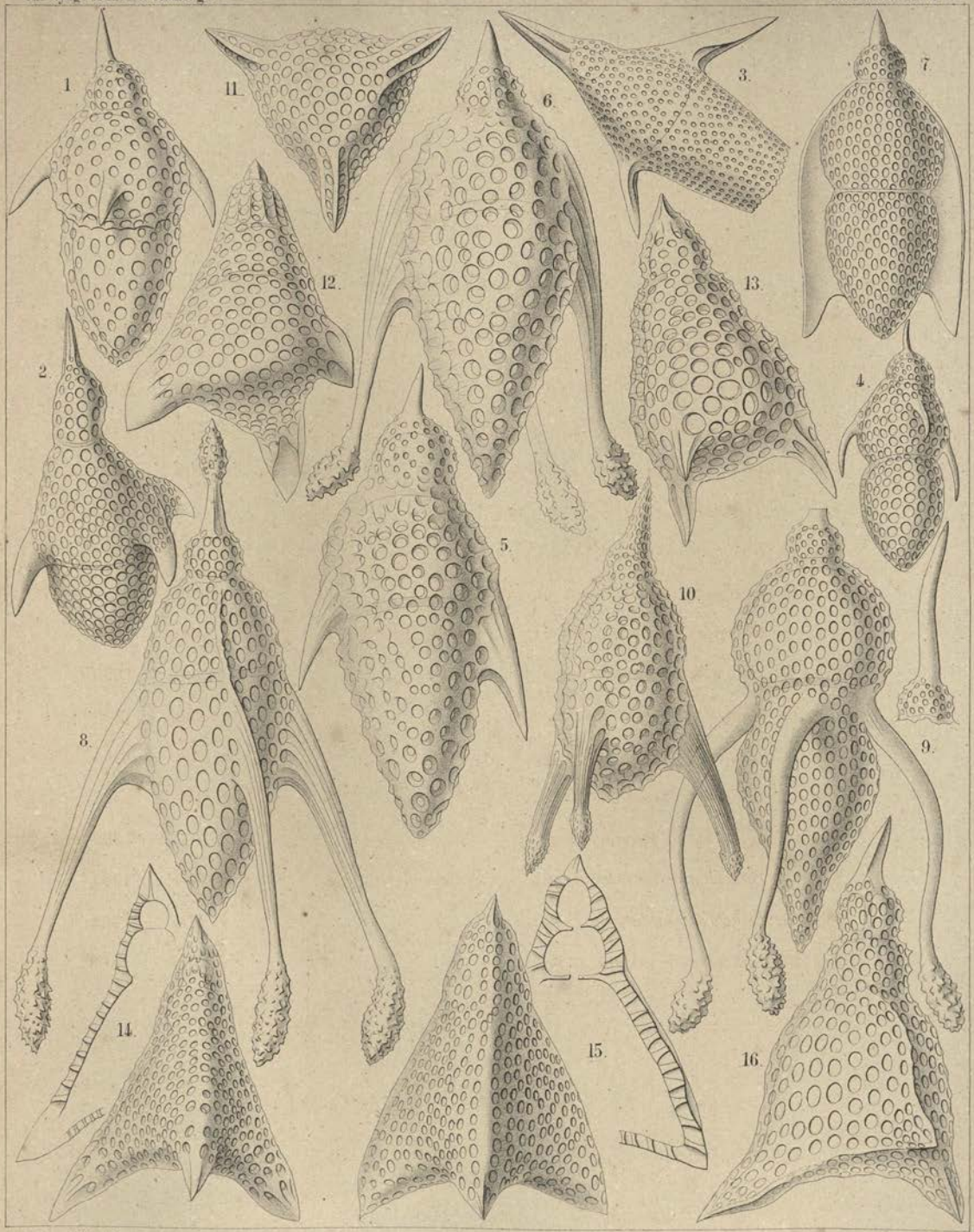
Order CYRTOIDEA.

Family PODOCYRTIDA.

PLATE 67.

PODOCYRTIDA.

		Diam.	Page
Fig. 1.	*Lithornithium falco*, n. sp.,	× 400	1355
Fig. 2.	*Lithornithium fringilla*, n. sp.,	× 400	1355
Fig. 3.	*Lithornithium ciconia*, n. sp.,	× 400	1354
Fig. 4.	*Lithornithium trochilus*, n. sp.,	× 400	1355
Fig. 5.	*Theopera fusiformis*, n. sp.,	× 400	1357
Fig. 6.	*Theopera chytropus*, n. sp.,	× 400	1358
Fig. 7.	*Theopera prismatica*, n. sp.,	× 300	1357
Fig. 8.	*Theopera cortina*, n. sp.,	× 400	1358
Fig. 9.	*Rhopalocanium delphicum*, n. sp.,	× 400	1360
Fig. 10.	*Rhopalocanium lasanum*, n. sp.,	× 300	1359
Fig. 11.	*Lithochytris lanterna*, n. sp.,	× 300	1364
Fig. 12.	*Lithochytris cortina*, n. sp.,	× 300	1362
Fig. 13.	*Lithochytris pyriformis*, n. sp.,	× 400	1362
Fig. 14.	*Lithochytris lucerna*, n. sp.,	× 300	1364
Fig. 15.	*Lithochytris pteropus*, n. sp.,	× 300	1364
Fig. 16.	*Lithochytris galeata*, n. sp.,	× 400	1363



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1-5. LITHORNITHIUM, 6-10. RHOPALOCANIUM, 11-16. LITHOCHYTRIS.

PLATE 68.

Legion NASSELLARIA.

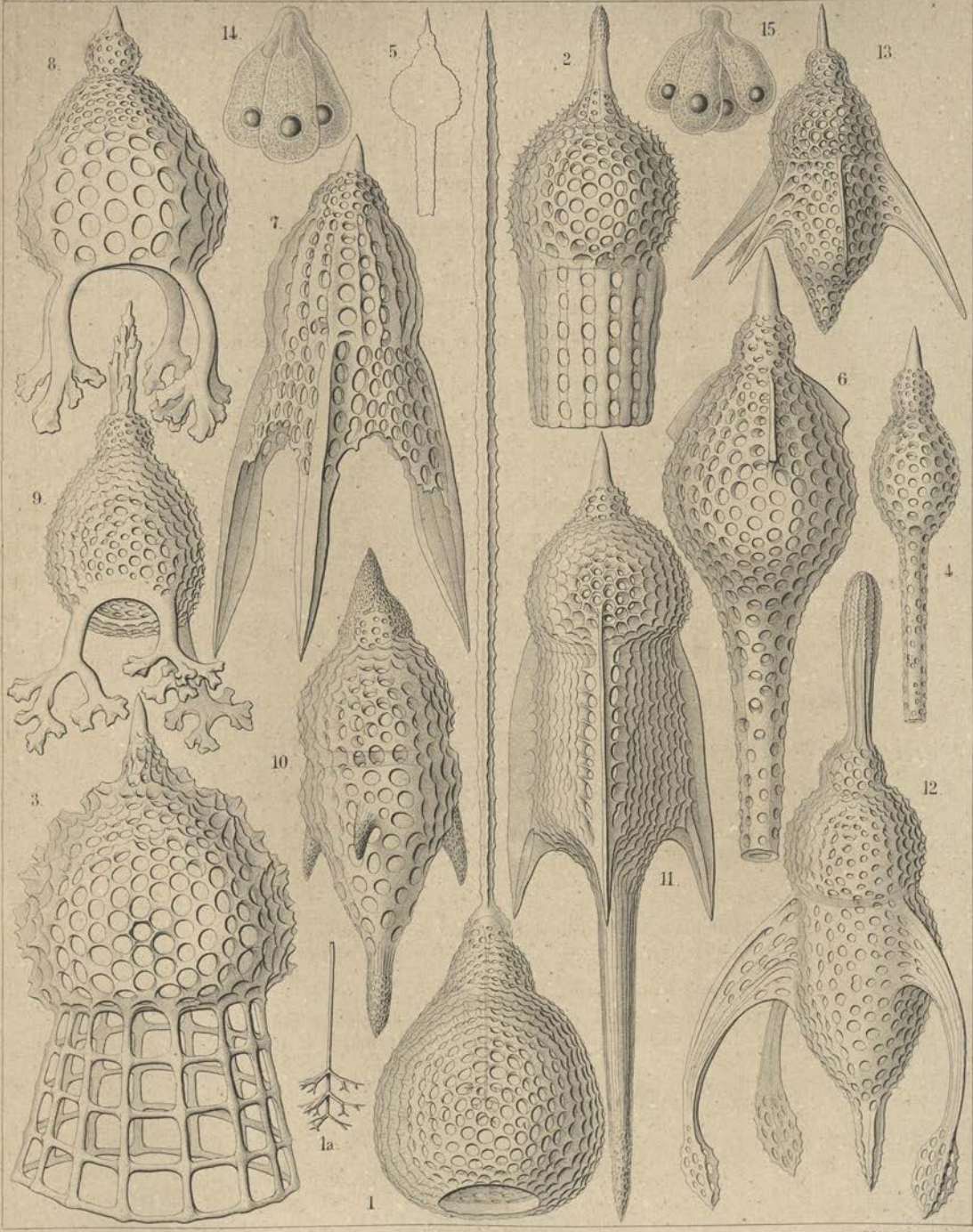
Order CYRTOIDEA.

Families PODOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

PLATE 68.

PODOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

		Diam.	Page
Fig. 1.	*Axocorys macroceros*, n. sp.,	× 300	1420
	Fig. 1*a*. The internal axial rod of the shell, which bears on its basal part three verticils of three diverging forked spines,	× 300	
Fig. 2.	*Cycladophora fenestrata*, n. sp.,	× 300	1380
Fig. 3.	*Cycladophora pantheon*, n. sp.,	× 400	1379
Fig. 4.	*Theosyringium tibia*, n. sp.,	× 300	1409
Fig. 5.	*Theosyringium pipetta*, n. sp.,	× 200	1409
Fig. 6.	*Pterocorys tubulosa*, n. sp.,	× 400	1319
Fig. 7.	*Pterocanium pyramis*, n. sp.,	× 400	1330
Fig. 8.	*Thyrsocyrtis rhizopodium*, n. sp.,	× 300	1351
Fig. 9.	*Thyrsocyrtis arborescens*, n. sp.,	× 400	1350
Fig. 10.	*Rhopalatractus foveolatus*, n. sp.,	× 400	1361
Fig. 11.	*Rhopalatractus pentacanthus*, n. sp.,	× 300	1361
Fig. 12.	*Rhopalatractus fenestratus*, n. sp. (vel *Dictyatractus fenestratus*),	× 300	1361
Fig. 13.	*Hexalatractus fusiformis*, n. sp.,	× 300	1394
Fig. 14.	*Sethornithium dictyopterum*, n. sp.,	× 300	1356
	The trilobate central capsule, which contains in its uppermost part the trilobate nucleus, and in the basal part of each lobe an oil-globule.		
Fig. 15.	*Lophocyrtis synapta*, n. sp.,	× 300	1411
	The quadrilobate central capsule, which contains in its uppermost part the quadrilobate nucleus, and in the basal part of each lobe an oil-globule.		



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1. AXOCORYS, 2. 3. CYCLADOPHORA, 4. 5. THEOSYRINGIUM, 6. PTEROSYRINGIUM, 7. PTEROCANIUM, 8. 9. THYRSOCYRTIS, 10. 11. RHOPALATRACTUS, 12. DICTYATRACTUS, 13. HEXALATRACTUS.

PLATE 69.

Legion NASSELLARIA.

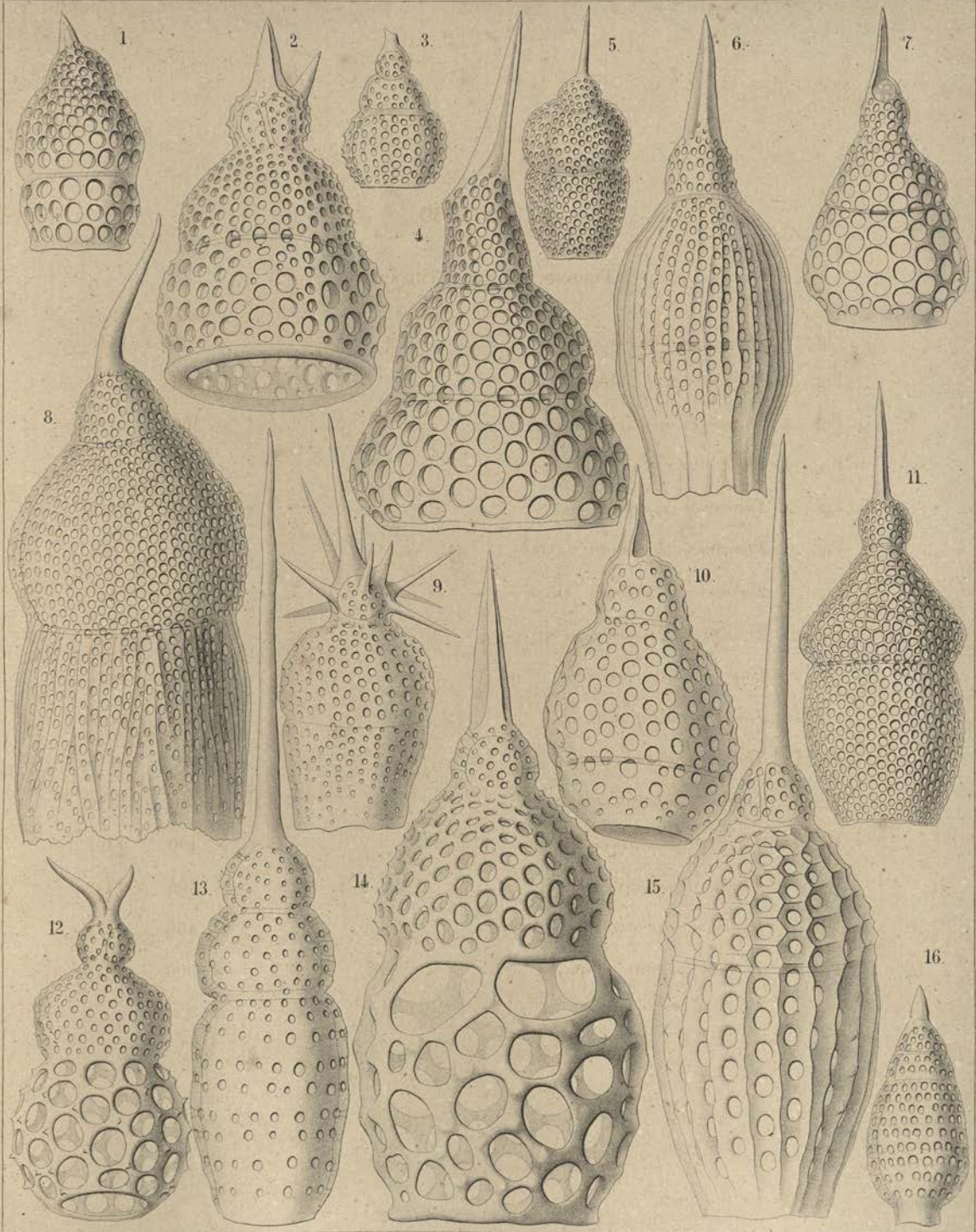
Order CYRTOIDEA.

Families PHORMOCYRTIDA et THEOCYRTIDA

PLATE 69.

PHORMOCYRTIDA et THEOCYRTIDA.

		Diam.	Page
Fig. 1.	*Theocorys plutonis*, n. sp.,	× 400	1416
Fig. 2.	*Lophoconus rhinoceros*, n. sp.,	× 400	1405
Fig. 3.	*Theocorys apollinis*, n. sp.,	× 300	1418
Fig. 4.	*Theoconus jovis*, n. sp.,	× 400	1401
Fig. 5.	*Theocorys veneris*, n. sp.,	× 300	1415
Fig. 6.	*Phormocyrtis costata*, n. sp.,	× 300	1369
Fig. 7.	*Theoconus junonis*, n. sp.,	× 300	1401
Fig. 8.	*Theocyrtis ptychodes*, n. sp.,	× 400	1408
Fig. 9.	*Lophocorys astrocephala*, n. sp.,	× 300	1421
Fig. 10.	*Theocorys obliqua*, n. sp.,	× 400	1417
Fig. 11.	*Theocorys dianæ*, n. sp.,	× 400	1416
Fig. 12.	*Lophocorys bovicornis*, n. sp.,	× 300	1422
Fig. 13.	*Theocyrtis macroceros*, n. sp.,	× 400	1407
Fig. 14.	*Theocorys minervæ*, n. sp.,	× 300	1419
Fig. 15.	*Phormocyrtis longicornis*, n. sp.,	× 400	1370
Fig. 16.	*Theocorys ovata*, n. sp.,	× 300	1416



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THEOCORYS.

PLATE 70.

Legion NASSELLARIA.

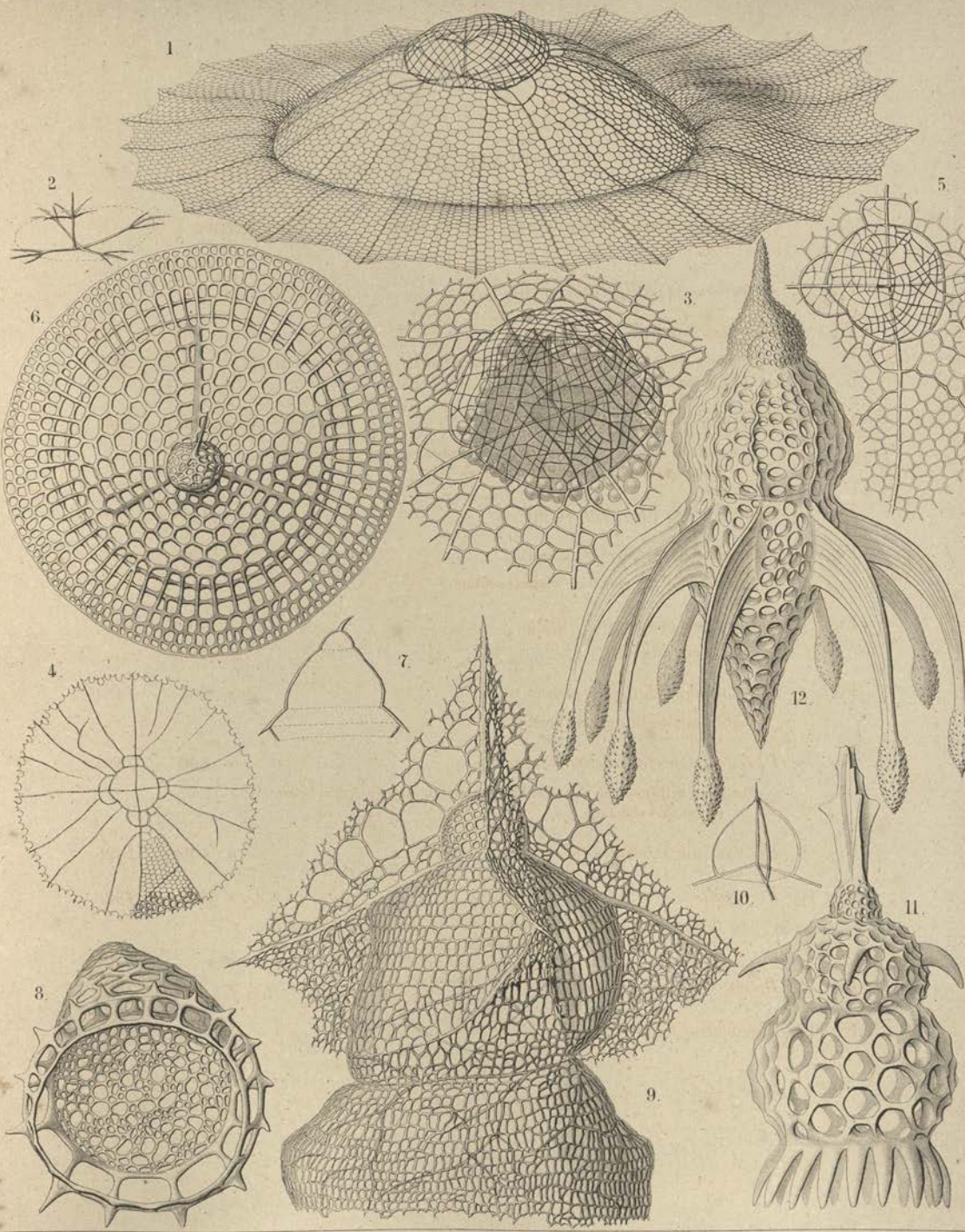
Order CYRTOIDEA.

Families ANTHOCYRTIDA, PODOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

PLATE 70.

Anthocyrtida, Podocyrtida, Phormocyrtida et Theocyrtida.

		Diam.	Page
Fig. 1.	*Theophormis callipilium*, n. sp., ...	× 300	1367
Fig. 2.	*Theophormis callipilium*, n. sp., ...	× 300	1367
	The four cruciate rods of the cortinar septum and the vertical columella in its centre.		
Fig. 3.	*Theophormis callipilium*, n. sp., ...	× 400	1367
	The cephalis alone with the enclosed quadrilobate central capsule, which is surrounded by numerous xanthellæ.		
Fig. 4.	*Sethophormis umbrella*, n. sp., ...	× 150	1248
Fig. 5.	*Sethophormis umbrella*, n. sp., ...	× 400	1248
	Cephalis with the cruciform cortinar septum.		
Fig. 6.	*Theopilium tricostatum*, n. sp., ...	× 400	1322
	Seen from above.		
Fig. 7.	*Phrenocodon clathrostomium*, n. sp., . . .	× 250	1434
	Vertical section through the shell.		
Fig. 8.	*Phrenocodon clathrostomium*, n. sp., . . .	× 500	1434
	Shell seen half from below, and exhibiting the fenestrated septum between thorax and abdomen.		
Fig. 9.	*Pteropilium stratiotes*, n. sp., ...	× 400	1326
Fig. 10.	*Pteropilium stratiotes*, n. sp., ...	× 400	1326
	The three rods of the cortinar septum and the three arches connecting them with the central axial columella.		
Fig. 11.	*Pterocodon ornatus*, n. sp., ...	× 300	1333
Fig. 12.	*Theophæna corona*, n. sp., ...	× 300	1394



E. Haeckel and A. Giltsch Del. K. Giltsch, Jena, Lithogr.

1–5. THEOPHORMIS, 6. THEOPILIUM, 7. 8. CLATHROSTOMIUM,
9. 10. PTEROPILIUM, 11. PTEROCODON, 12. THEOPHATNA.

PLATE 71.

Legion NASSELLARIA.

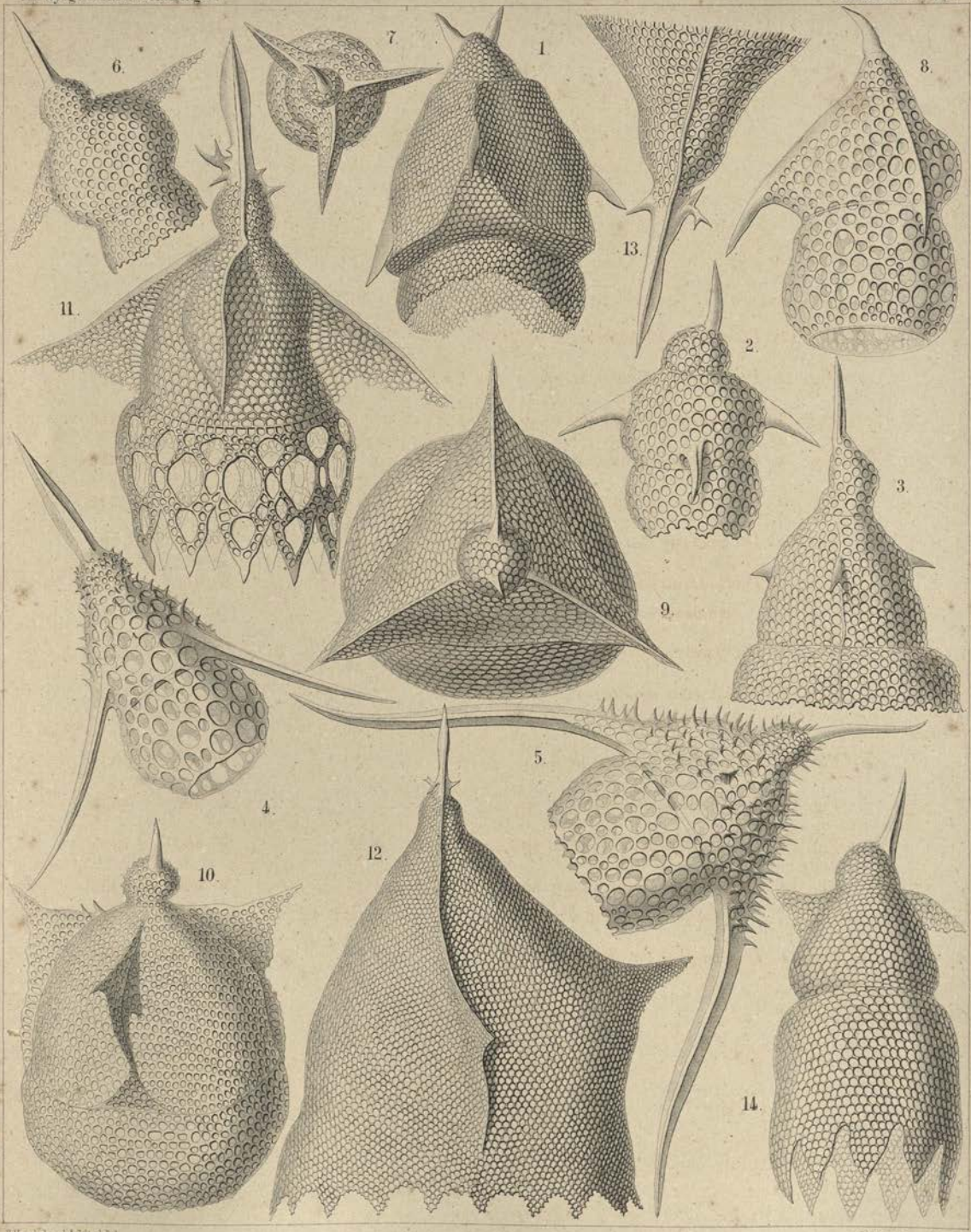
Order CYRTOIDEA.

Family PODOCYRTIDA.

PLATE 71.

PODOCYRTIDA.

		Diam.	Page
Fig. 1.	*Pterocorys rhinoceros*, n. sp.,	× 400	1320
Fig. 2.	*Pterocorys columba*, n. sp.,	× 400	1317
Fig. 3.	*Pterocorys campanula*, n. sp.,	× 400	1316
Fig. 4.	*Pterocorys hirundo*, n. sp.,	× 300	1318
Fig. 5.	*Pterocorys aquila*, n. sp.,	× 300	1317
Fig. 6.	*Dictyoceras insectum*, n. sp.,	× 400	1324
Fig. 7.	*Dictyoceras insectum*, n. sp., Seen from the apex.	× 400	1324
Fig. 8.	*Dictyoceras formica*, n. sp.,	× 400	1325
Fig. 9.	*Dictyoceras melitta*, n. sp., Seen from the apex.	× 400	1325
Fig. 10.	*Dictyoceras bombus*, n. sp.,	× 400	1325
Fig. 11.	*Dictyocodon annasethe*, n. sp.,	× 400	1334
Fig. 12.	*Dictyocodon palladius*, n. sp.,	× 300	1335
Fig. 13.	*Dictyocodon palladius*, n. sp., Apical part of the shell alone.	× 600	1335
Fig. 14.	*Dictyocodon carolotæ*, n. sp.,	× 300	1335



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1-5. PTEROCORYS, 6-10. DICTYOCERAS, 11-14. DICTYOCODON.

PLATE 72.

Legion NASSELLARIA.

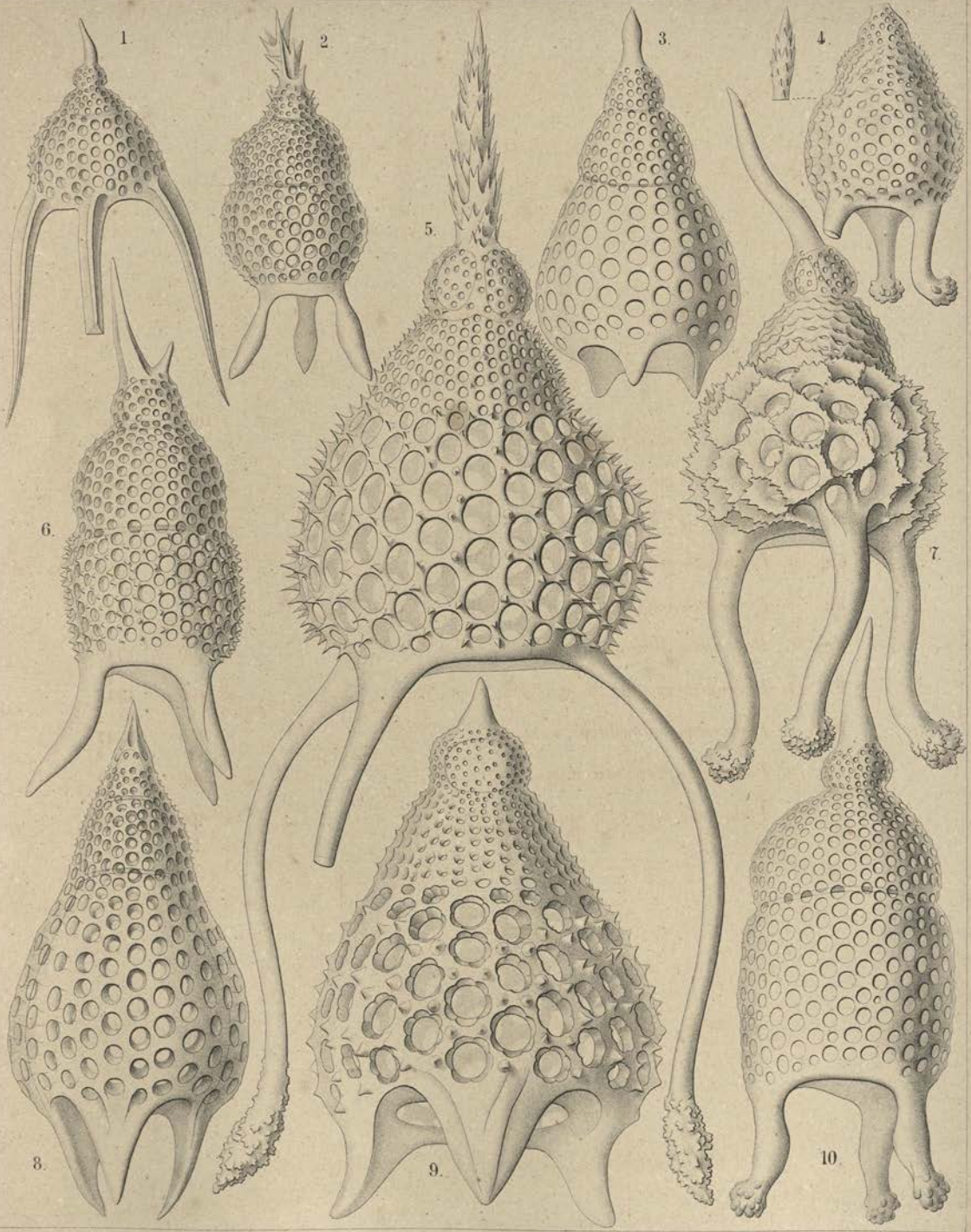
Order CYRTOIDEA.

Family PODOCYRTIDA.

PLATE 72.

PODOCYRTIDA.

		Diam.	Page
Fig. 1.	*Podocyrtis prismatica*, n. sp.,	× 300	1340
Fig. 2.	*Podocyrtis corythæola*, n. sp ,	× 300	1339
Fig. 3.	*Podocyrtis lithoconus*, n. sp.,	× 300	1348
Fig. 4.	*Podocyrtis tripodiscus*, n. sp ,	× 300	1338
Fig. 5.	*Podocyrtis magnifica*, n. sp.,	× 500	1341
Fig. 6.	*Podocyrtis divergens*, n. sp.,	× 400	1340
Fig. 7.	*Podocyrtis cristata*, n. sp.,	× 400	1342
Fig. 8.	*Podocyrtis pedicellaria*, n. sp.,	× 300	1347
Fig. 9.	*Podocyrtis flosculata*, n. sp.,	× 500	1341
Fig. 10.	*Podocyrtis surena*, n. sp.,	× 400	1339



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PODOCYRTIS.

PLATE 73.

Legion NASSELLARIA.

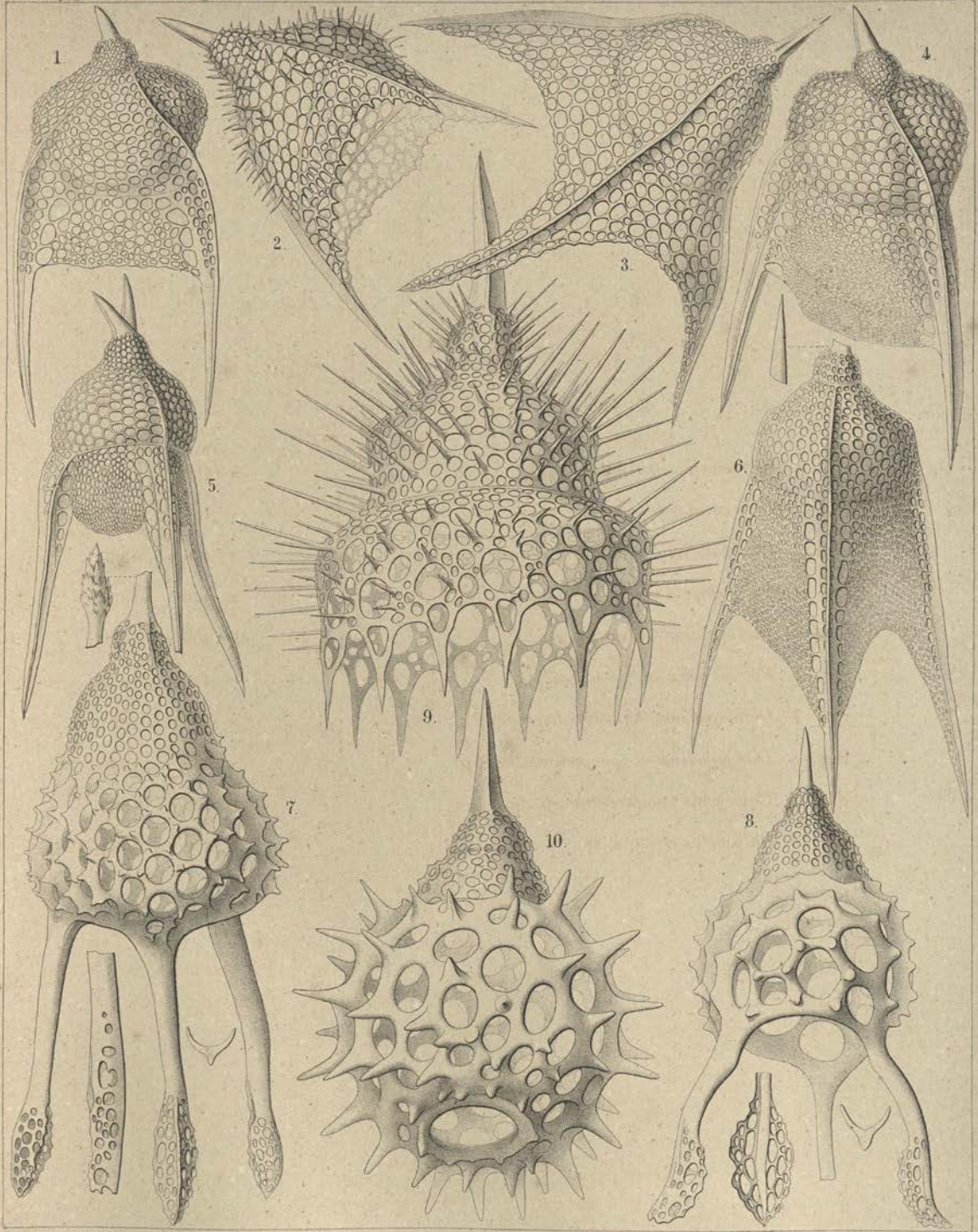
Order CYRTOIDEA.

Families PODOCYRTIDA et PHORMOCYRTIDA.

PLATE 73.

PODOCYRTIDA et PHORMOCYRTIDA.

		Diam.	Page
Fig. 1.	*Pterocanium tricolpum*, n. sp.,	× 400	1331
Fig. 2.	*Pterocanium orcinum*, n. sp.,	× 400	1329
Fig. 3.	*Pterocanium gravidum*, n. sp.,	× 400	1329
Fig. 4.	*Pterocanium eucolpum*, n. sp.,	× 400	1332
Fig. 5.	*Pterocanium bicorne*, n. sp.,	× 400	1332
Fig. 6.	*Pterocanium virgineum*, n. sp.,	× 400	1330
Fig. 7.	*Dictyopodium thyrsolophus*, n. sp.,	× 300	1354
Fig. 8.	*Dictyopodium scaphopodium*, n. sp.,	× 300	1353
Fig. 9.	*Calocyclas monumentum*, n. sp.,	× 400	1385
Fig. 10.	*Calocyclas casta*, n. sp.,	× 400	1384



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K. Gültsch, Jena, Lithogr.

1–8. DICTYOPODIUM, 9. 10. LAMPROCYCLAS.

PLATE 74.

Legion NASSELLARIA.

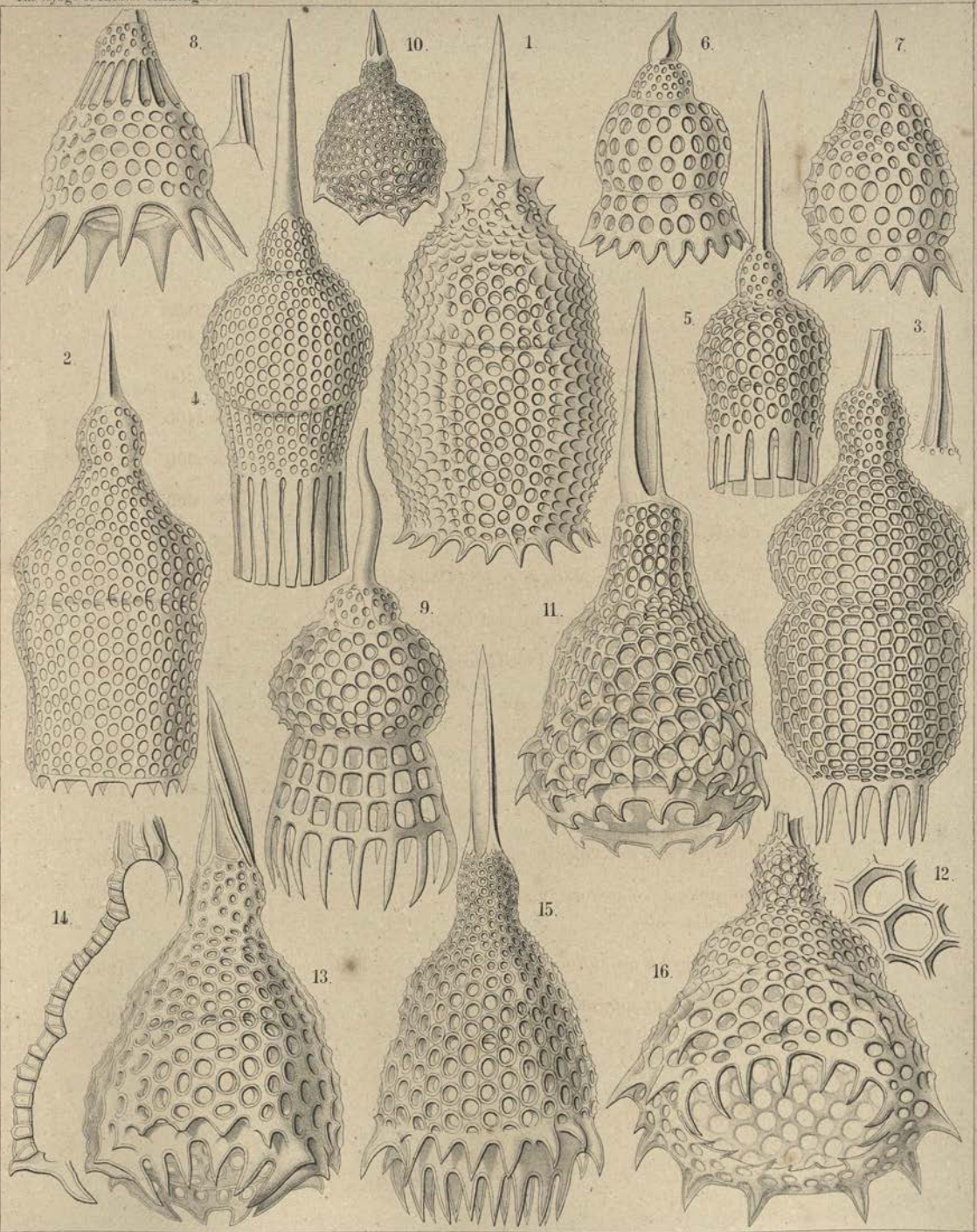
Order CYRTOIDEA.

Family PHORMOCYRTIDA.

PLATE 74.

PHORMOCYRTIDA.

		Diam.	Page
Fig 1.	*Calocyclas parthenia*, n. sp.,	× 400	1385
Fig. 2.	*Calocyclas amicæ*, n. sp.,	× 400	1382
Fig. 3.	*Calocyclas vestalis*, n. sp.,	× 400	1382
Fig. 4.	*Calocyclas virginis*, n. sp.,	× 300	1381
Fig. 5.	*Calocyclas veneris*, n. sp.,	× 300	1381
Fig. 6.	*Clathrocyclas basilea*, n. sp. (vel *Calocyclas basilea*),	× 400	1386
Fig. 7.	*Clathrocyclas principessa*, n. sp. (vel *Calocyclas principessa*),	× 400	1386
Fig. 8.	*Clathrocyclas collaris*, n. sp. (vel *Calocyclas collaris*),	× 400	1387
Fig. 9.	*Alacorys carcinus*, n. sp. (vel *Calocyclas carcinus*),	× 300	1375
Fig. 10.	*Lamprocyclas deflorata*, n. sp.,	× 200	1391
Fig. 11.	*Lamprocyclas reginæ*, n. sp.,	× 400	1391
Fig. 12.	*Lamprocyclas reginæ*, n. sp., Two meshes of the network.	× 800	1391
Fig. 13.	*Lamprocyclas maritalis*, n. sp.,	× 400	1390
Fig. 14.	*Lamprocyclas maritalis*, n. sp., Vertical section.	× 400	1390
Fig. 15.	*Lamprocyclas nuptialis*, n. sp.,	× 400	1390
Fig. 16.	*Lamprocyclas saltatricis*, n. sp.,	× 400	1391



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1-9. CALOCYCLAS, 10-16. LAMPROCYCLAS.

PLATE 75.

Legion NASSELLARIA.

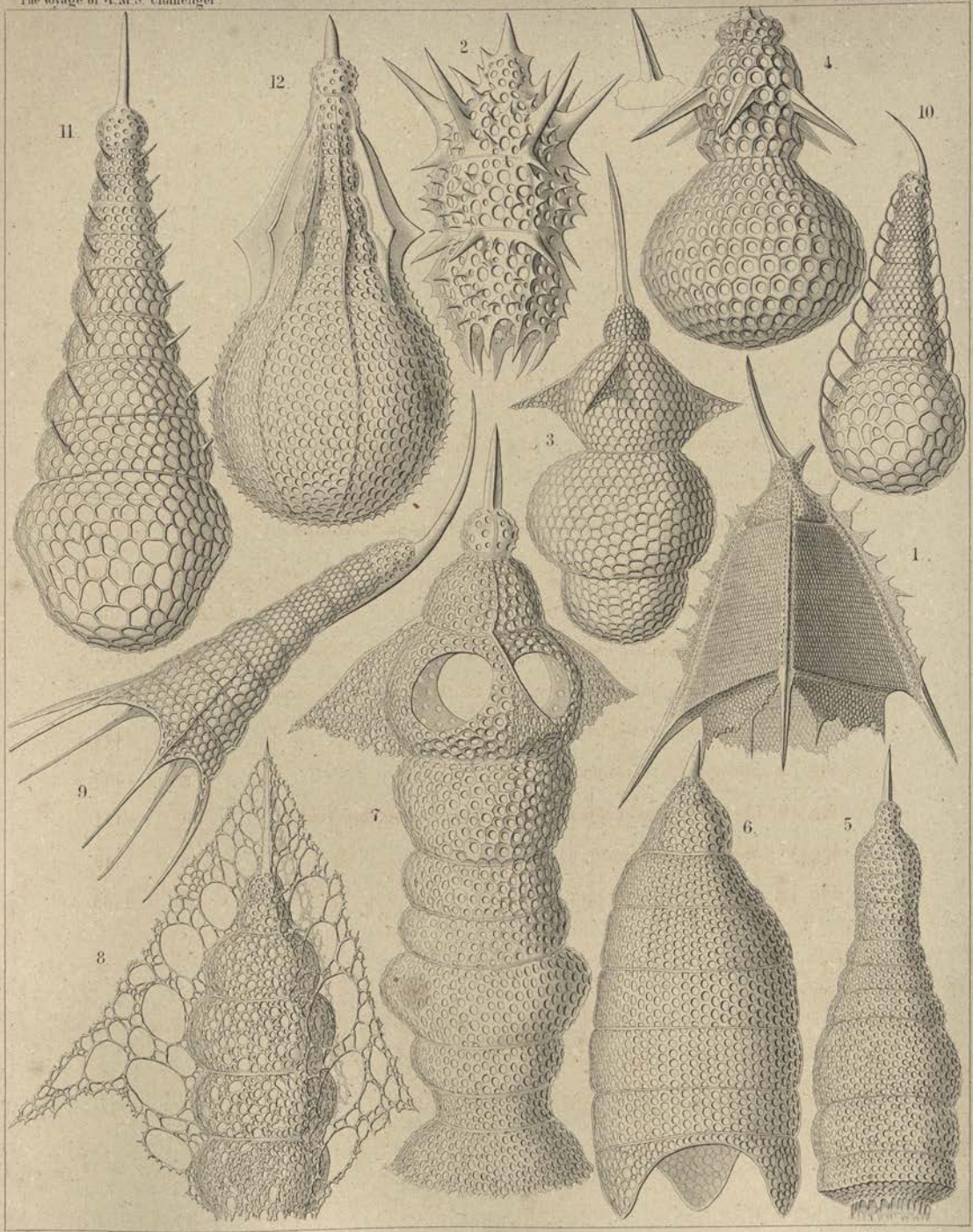
Order CYRTOIDEA.

Families PODOCAMPIDA et PHORMOCAMPID

PLATE 75.

PODOCAMPIDA et PHORMOCAMPIDA.

		Diam.	Page
Fig. 1.	*Artopilium elegans*, n. sp. (vel *Trictenartus elegans*), .	× 200	1440
Fig. 2.	*Artophormis horrida*, n. sp., ...	× 300	1458
Fig. 3.	*Cyrtopera thoracoptera*, n. sp. (vel *Artopera thoracoptera*),	× 300	1450
Fig. 4.	*Stichophæna ærostatica*, n. sp. (vel *Artophæna ærostatica*), .	× 400	1463
Fig. 5.	*Cyrtophormis turricula*, n. sp., ...	× 300	1463
Fig. 6.	*Stichopodium dictyopodium*, n. sp., ...	× 400	1447
Fig. 7.	*Artopilium trifenestra*, n. sp. (vel *Clathropyrgus trifenestra*),	× 500	1441
Fig. 8.	*Artopilium stichopterygium*, n. sp., ...	× 400	1442
Fig. 9.	*Stichophormis cornutella*, n. sp., ...	× 400	1455
Fig. 10.	*Cyrtopera laguncula*, n. sp. (vel *Cyrtolagena laguncula*), .	× 400	1451
Fig. 11.	*Stichopera pectinata*, n. sp., ...	× 500	1449
Fig. 12.	*Stichophæna ritteriana*, n. sp., ...	× 400	1465



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1 ARTOPILIUM, 2 ARTOPHORMIS, 3 ARTOPERA, 4 ARTOPHATNA, 5 STICHOCORYS, 6 STICHOPODIUM, 7 CLATHROPYRGUS, 8 STICHOPTERYGIUM, 9 STICHOPHORMIS, 10 CYRTOLAGENA, 11 STICHOPERA, 12 STICHOPHATNA.

PLATE 76.

Legion NASSELLARIA.

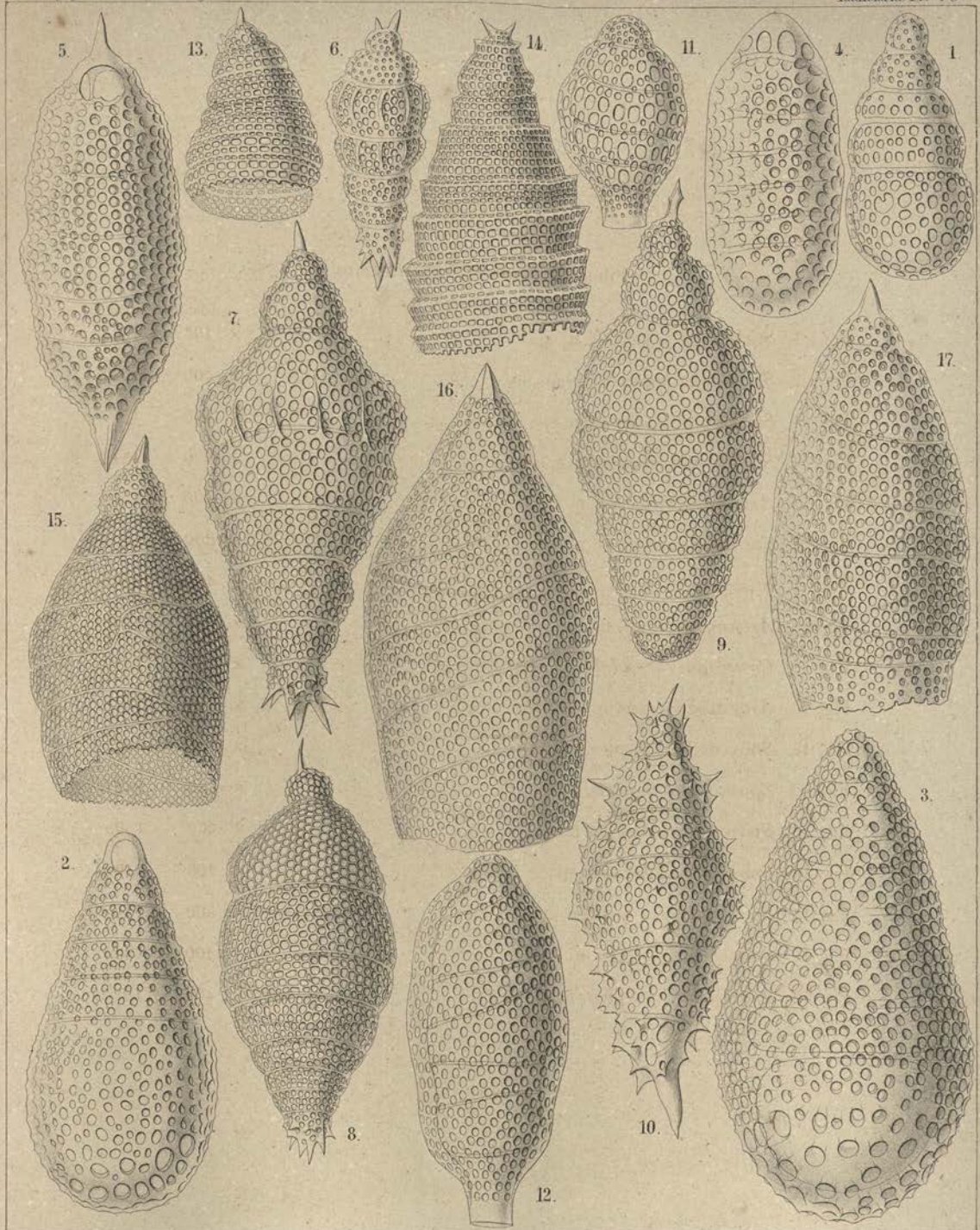
Order CYRTOIDEA.

Families PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 76.

PHORMOCAMPIDA et LITHOCAMPIDA.

		Diam.	Page
Fig. 1.	*Stichocapsa pentacola*, n. sp.,	× 400	1517
Fig. 2.	*Stichocapsa hexacola*, n. sp.,	× 400	1517
Fig. 3.	*Stichocapsa compacta*, n. sp.,	× 400	1517
Fig. 4.	*Stichocapsa paniscus*, n. sp.,	× 400	1518
Fig. 5.	*Artocapsa fusiformis*, n. sp.,	× 400	1519
Fig. 6.	*Stichophæna nonaria*, n. sp.,	× 200	1466
Fig. 7.	*Stichophæna novena*, n. sp.,	× 400	1466
Fig. 8.	*Artocapsa elegans*, n. sp.,	× 400	1520
Fig. 9.	*Cyrtocapsa chrysalidium*, n. sp.,	× 400	1515
Fig. 10.	*Artocapsa spinosa*, n. sp.,	× 400	1519
Fig. 11.	*Spirocampe callispira*, n. sp.,	× 300	1511
Fig. 12.	*Spirocampe allospira*, n. sp.,	× 400	1511
Fig. 13.	*Spirocyrtis cornutella*, n. sp.,	× 400	1509
Fig. 14.	*Spirocyrtis scalaris*, n. sp.,	× 400	1509
Fig. 15.	*Spirocyrtis merospira*, n. sp.,	× 500	1510
Fig. 16.	*Spirocyrtis holospira*, n. sp.,	× 400	1509
Fig. 17.	*Spirocyrtis diplospira*, n. sp.,	× 400	1510



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1 - 4. STICHOCAPSA , 5 - 10. STICHOPERA , 11. 12. SPIROCAMPE ,
13. - 17. SPIROCYRTIS .

PLATE 77.

Legion NASSELLARIA.

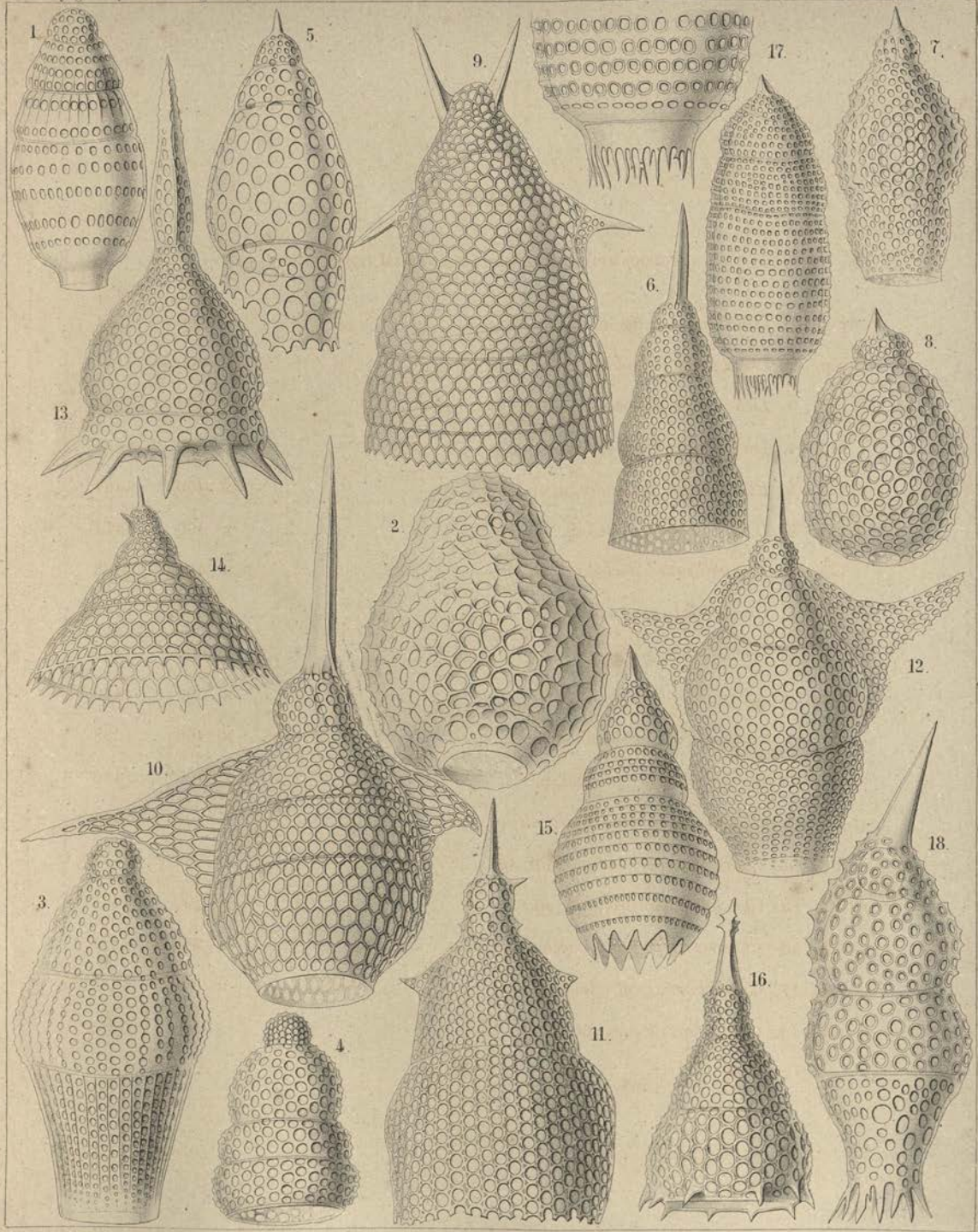
Order CYRTOIDEA.

Families PODOCAMPIDA, PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 77.

PODOCAMPIDA, PHORMOCAMPIDA et LITHOCAMPIDA.

		Diam.	Page
Fig. 1.	*Lithocampe ovata*, n. sp.,	× 500	1504
Fig. 2.	*Lithocampe urceolata*, n. sp.,	× 400	1507
Fig. 3.	*Lithocampe diploconus*, n. sp.,	× 400	1505
Fig. 4.	*Dictyomitra eurythorax*, n. sp.,	× 300	1477
Fig. 5.	*Eucyrtidium teuscheri*, n. sp.,	× 400	1491
Fig. 6.	*Lithostrobus cornutus*, n. sp.,	× 400	1474
Fig. 7.	*Eucyrtidium bütschlii*, n. sp.,	× 400	1492
Fig. 8.	*Cyrtocapsa compacta*, n. sp.,	× 300	1512
Fig. 9.	*Stichopilium bicorne*, n. sp.,	× 600	1437
Fig. 10.	*Artopilium longicorne*, n. sp.,	× 500	1440
Fig. 11.	*Stichopilium campanulatum*, n. sp.,	× 400	1438
Fig. 12.	*Artopilium cyrtopterum*, n. sp.,	× 400	1440
Fig. 13.	*Phormocampe campanula*, n. sp.,	× 400	1456
Fig. 14.	*Phormocampe eucalyptra*, n. sp.,	× 300	1457
Fig. 15.	*Cyrtophormis corona*, n. sp.,	× 300	1462
Fig. 16.	*Phormocampe lamprocyclas*, n. sp.,	× 300	1457
Fig. 17.	*Cyrtophormis cylindrica*, n. sp.,	× 300	1461
Fig. 18.	*Cyrtophormis cornuta*, n. sp.,	× 500	1462



E. Haeckel and A. Giltsch Del. Lith. Anst. v. E. Fritsch, Jena.

1-4. LITHOCAMPIUM, 5-8. EUCYRTIDIUM, 9-12. PTEROCORYTHIUM, 13-18. ANTHOCORYS.

PLATE 78.

Legion NASSELLARIA.

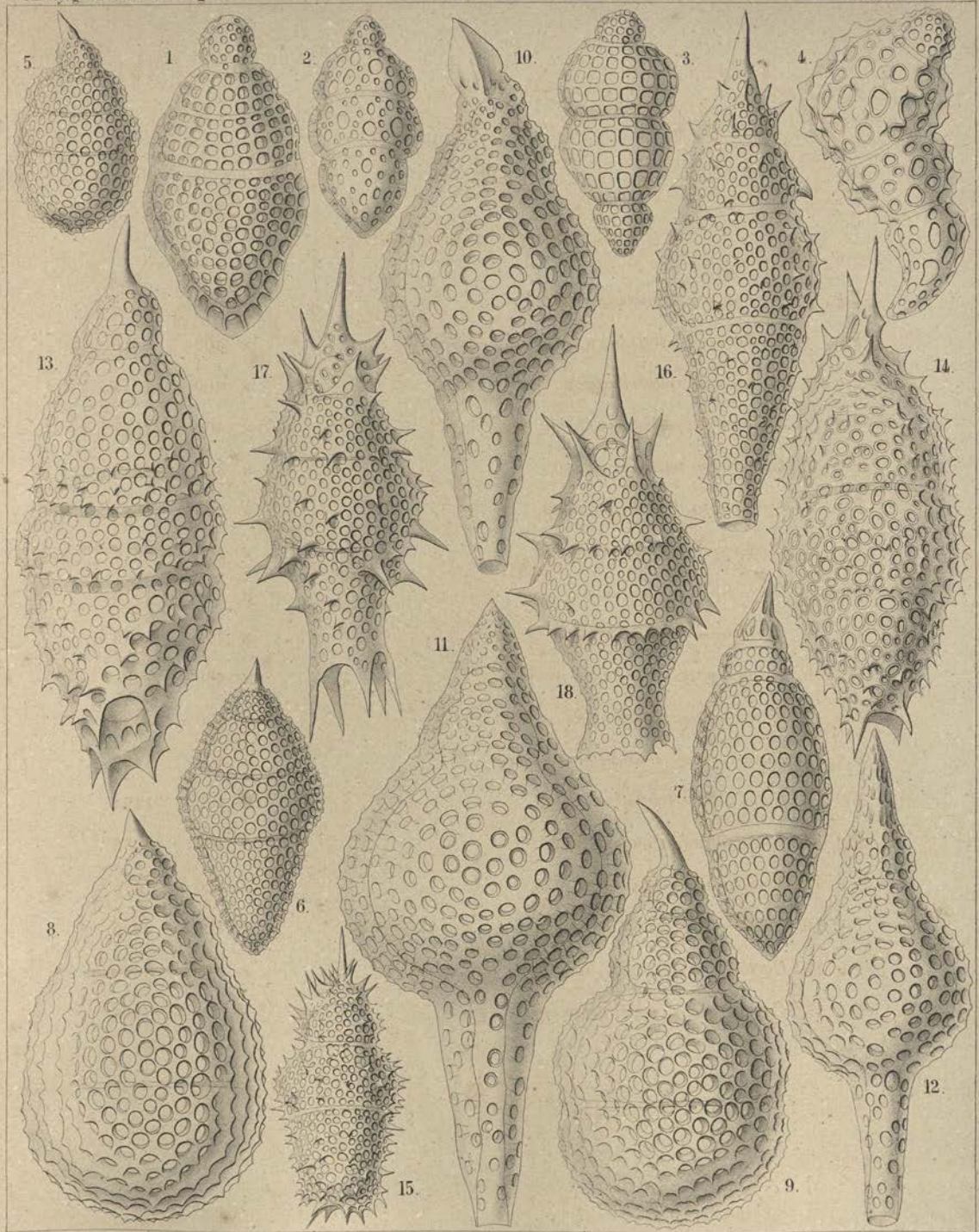
Order CYRTOIDEA.

Families PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 78.

PHORMOCAMPIDA et LITHOCAMPIDA.

		Diam.	Page
Fig. 1.	*Stichocapsa tetracola*, n. sp.,	× 600	1515
Fig. 2.	*Stichocapsa tricincta*, n. sp.,	× 400	1516
Fig. 3.	*Stichocapsa quadrigata*, n. sp.,	× 400	1515
Fig. 4.	*Stichocapsa monstrosa*, n. sp.,	× 400	1517
Fig. 5.	*Cyrtocapsa tetrapera*, n. sp.,	× 300	1512
Fig. 6.	*Cyrtocapsa diploconus*, n. sp.,	× 300	1513
Fig. 7.	*Cyrtocapsa fusulus*, n. sp.,	× 400	1514
Fig. 8.	*Cyrtocapsa pyrum*, n. sp.,	× 400	1513
Fig. 9.	*Cyrtocapsa cornuta*, n. sp.,	× 400	1513
Fig. 10.	*Eusyringium conosiphon*, n. sp.,	× 400	1496
Fig. 11.	*Eusyringium pachysiphon*, n. sp.,	× 400	1496
Fig. 12.	*Eusyringium macrosiphon*, n. sp.,	× 400	1497
Fig. 13.	*Eucyrtidium tricinctum*, n. sp.,	× 400	1494
Fig. 14.	*Eucyrtidium armatum*, n. sp.,	× 400	1495
Fig. 15.	*Eucyrtidium ehrenbergii*, n. sp.,	× 300	1495
Fig. 16.	*Eucyrtidium conostoma*, n. sp.,	× 400	1495
Fig. 17.	*Cyrtophormis armata*, n. sp.,	× 400	1460
Fig. 18.	*Cyrtophormis cingulata*, n. sp.,	× 400	1460



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1-4. TETRACAPSA. 5-9. TETRAPERA. 10-12. EUSYRINGIUM.
13-18. ACANTHOCYRTE.

PLATE 79.

Legion NASSELLARIA.

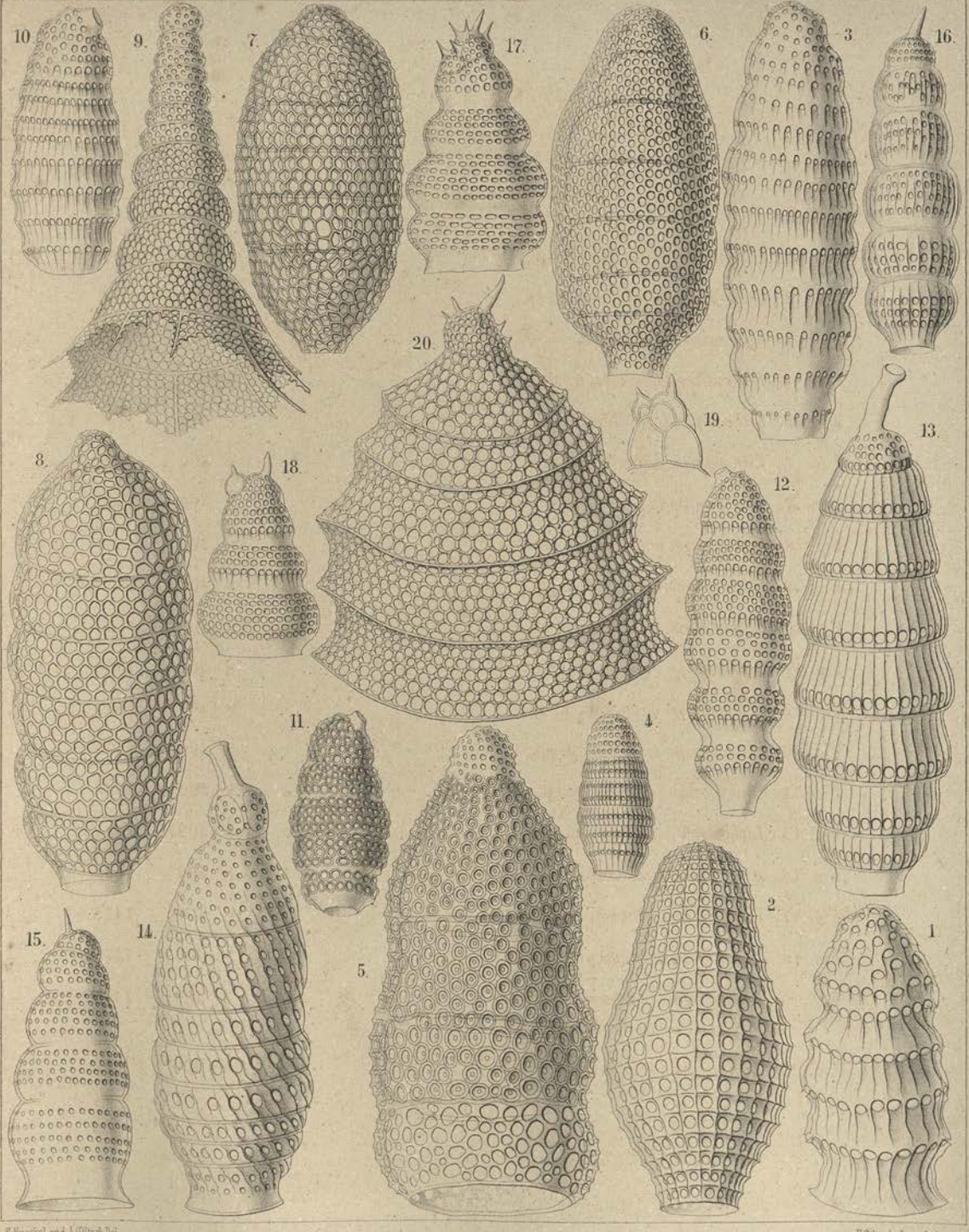
Order CYRTOIDEA.

Families PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 79.

PHORMOCAMPIDA et LITHOCAMPIDA.

		Diam.	Page
Fig. 1.	*Lithomitra nodosaria*, n. sp.,	× 600	1484
Fig. 2.	*Cyrtophormis tabulata*, n. sp.,	× 400	1166
Fig. 3.	*Lithomitra eruca*, n. sp.,	× 500	1485
Fig. 4.	*Lithomitra chrysalis*, n. sp.,	× 300	1485
Fig. 5.	*Lithomitra infundibulum*, n. sp.,	× 500	1487
Fig. 6.	*Lithocampe octocola*, n. sp.,	× 400	1508
Fig. 7.	*Lithocampe hexacola*, n. sp.,	× 400	1507
Fig. 8.	*Lithocampe heptacola*, n. sp.,	× 400	1508
Fig. 9.	*Stichophormis novena*, n. sp.,	× 400	1455
Fig. 10.	*Siphocampe annulosa*, n. sp.,	× 300	1500
Fig. 11.	*Siphocampe erucosa*, n. sp.,	× 300	1500
Fig. 12.	*Siphocampe caminosa*, n. sp.,	× 400	1500
Fig. 13.	*Siphocampe tubulosa*, n. sp.,	× 400	1500
Fig. 14.	*Siphocampe spiralis*, n. sp.,	× 500	1501
Fig. 15.	*Lithostrobus seriatus*, n. sp.,	× 400	1474
Fig. 16.	*Artostrobus articulatus*, n. sp.,	× 400	1483
Fig. 17.	*Lithostrobus lithobotrys*, n. sp.,	× 400	1475
Fig. 18.	*Lithostrobus botryocyrtis*, n. sp.,	× 400	1475
Fig. 19.	*Lithostrobus botryocyrtis*, n. sp., Vertical section through the cephalis.	× 400	1475
Fig. 20.	*Lithostrobus hexagonalis*, n. sp.,	× 400	1475



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1 - 14. LITHOCAMPE, 15. 20. EUCYRTIS.

PLATE 80.

Legion NASSELLARIA.

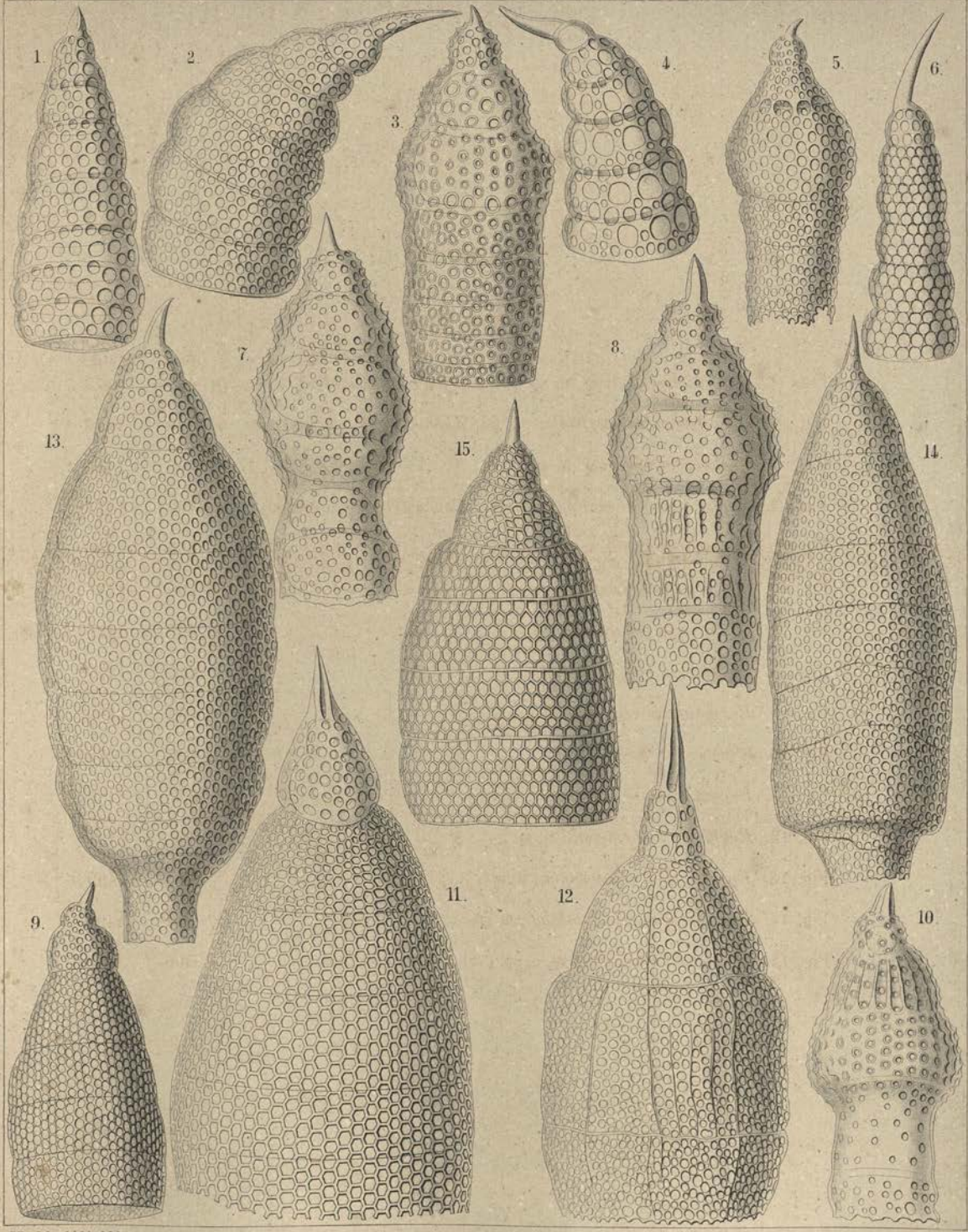
Order CYRTOIDEA.

Family LITHOCAMPIDA.

PLATE 80.

LITHOCAMPIDA.

		Diam.	Page
Fig. 1.	*Lithostrobus conulus*, n. sp. (vel *Cyrtostrobus conulus*), .	× 400	1472
Fig. 2.	*Lithostrobus cyrtoceras*, n. sp. (vel *Cornustrobus cyrtoceras*),	× 400	1470
Fig. 3.	*Stichocorys huschkei*, n. sp., ...	× 400	1480
Fig. 4.	*Lithostrobus caloceras*, n. sp. (vel *Cornustrobus caloceras*), .	× 400	1471
Fig. 5.	*Stichocorys okenii*, n. sp., ...	× 300	1480
Fig. 6.	*Lithostrobus tetrastichus*, n. sp. (vel *Conostrobus tetrastichus*),	× 500	1470
Fig. 7.	*Stichocorys panderi*, n. sp., ...	× 400	1479
Fig. 8.	*Stichocorys baerii*, n. sp., ...	× 400	1479
Fig. 9.	*Eucyrtidium cienkowskii*, n. sp., ...	× 400	1493
Fig. 10.	*Stichocorys wolffii*, n. sp., ...	× 400	1479
Fig. 11.	*Eucyrtidium hexagonatum*, n. sp., . . .	× 600	1489
Fig. 12.	*Eucyrtidium hertwigii*, n. sp., ...	× 400	1491
Fig. 13.	*Eusyringium cannostoma*, n. sp., ...	× 600	1499
Fig. 14.	*Eusyringium siphonostoma*, n. sp., ...	× 500	1499
Fig. 15.	*Lithostrobus hexastichus*, n. sp. (vel *Artostrobus hexastichus*),	× 500	1470



E. Haeckel and A. Giltsch Del. F. Giltsch, Jena, Lithogr.

EUCYRTIS.

PLATE 81.

Legion NASSELLARIA.

Order STEPHOIDEA.

Family STEPHANIDA.

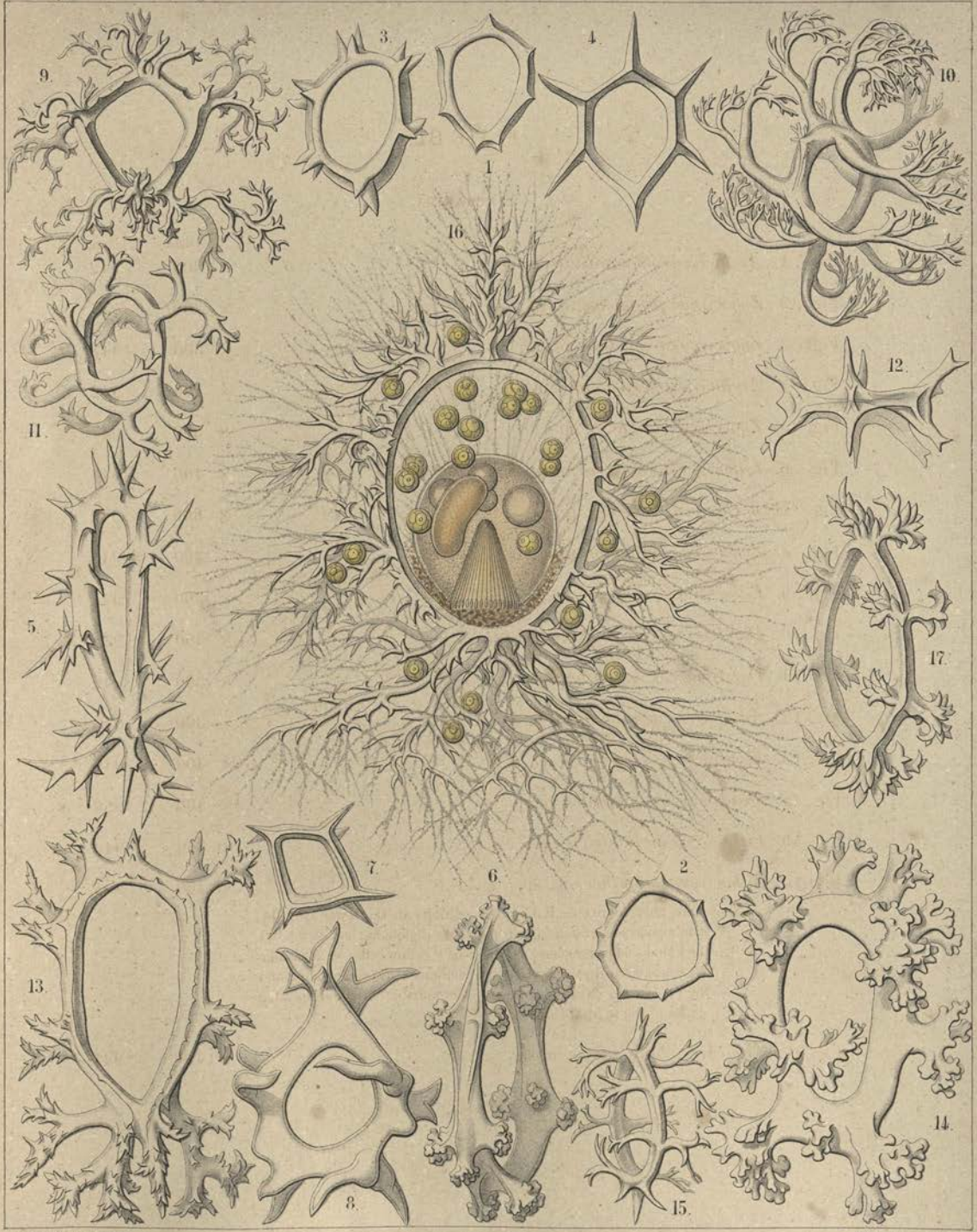
PLATE 81.

STEPHANIDA.

		Diam.	Page
Fig. 1.	*Archicircus primordialis*, n. sp.,	× 200	942
Fig. 2.	*Zygocircus polygonus*, n. sp.,	× 200	947
Fig. 3.	*Zygocircus triquetrus*, n. sp.,	× 300	947
Fig. 4.	*Archicircus hexacanthus*, n. sp.,	× 300	942
Fig. 5.	*Zygocircus acacia*, n. sp.,	× 300	947
Fig. 6.	*Lithocircus crambessa*, n. sp.,	× 400	944
Fig. 7.	*Archicircus rhombus*, n. sp.,	× 300	942
Fig. 8.	*Zygocircus pentagonus*, n. sp.,	× 300	946
Fig. 9.	*Lithocircus quadricornis*, n. sp.,	× 300	944
Fig. 10.	*Dendrocircus arborescens*, n. sp.,	× 300	949
Fig. 11.	*Dendrocircus dodecancistra*, n. sp.,	× 300	949
Fig. 12.	*Archicircus sexangularis*, n. sp.,	× 300	943
Fig. 13.	*Dendrocircus elegans*, n. sp.,	× 400	949
Fig. 14.	*Dendrocircus stalactites*, n. sp.,	× 400	950
Fig. 15.	*Lithocircus decimalis*, n. sp.,	× 300	944
Fig. 16.	*Lithocircus magnificus*, n. sp.,	× 400	945

The ovate, red-coloured central capsule exhibits in the lower half the striate podoconus, in the upper half four oil-globules, and at the left the kidney-shaped nucleus. Numerous "yellow cells" or xanthellæ are scattered in the calymma, which contains brown pigment around the porochora. Numerous pseudopodia radiate from the supporting spines of the sagittal ring.

Fig. 17.	*Lithocircus hexablastus*, n. sp.,	× 400	944



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1 - 8 LITHOCIRCUS, 9 - 17 DENDROCIRCUS.

PLATE 82.

Legion NASSELLARIA.

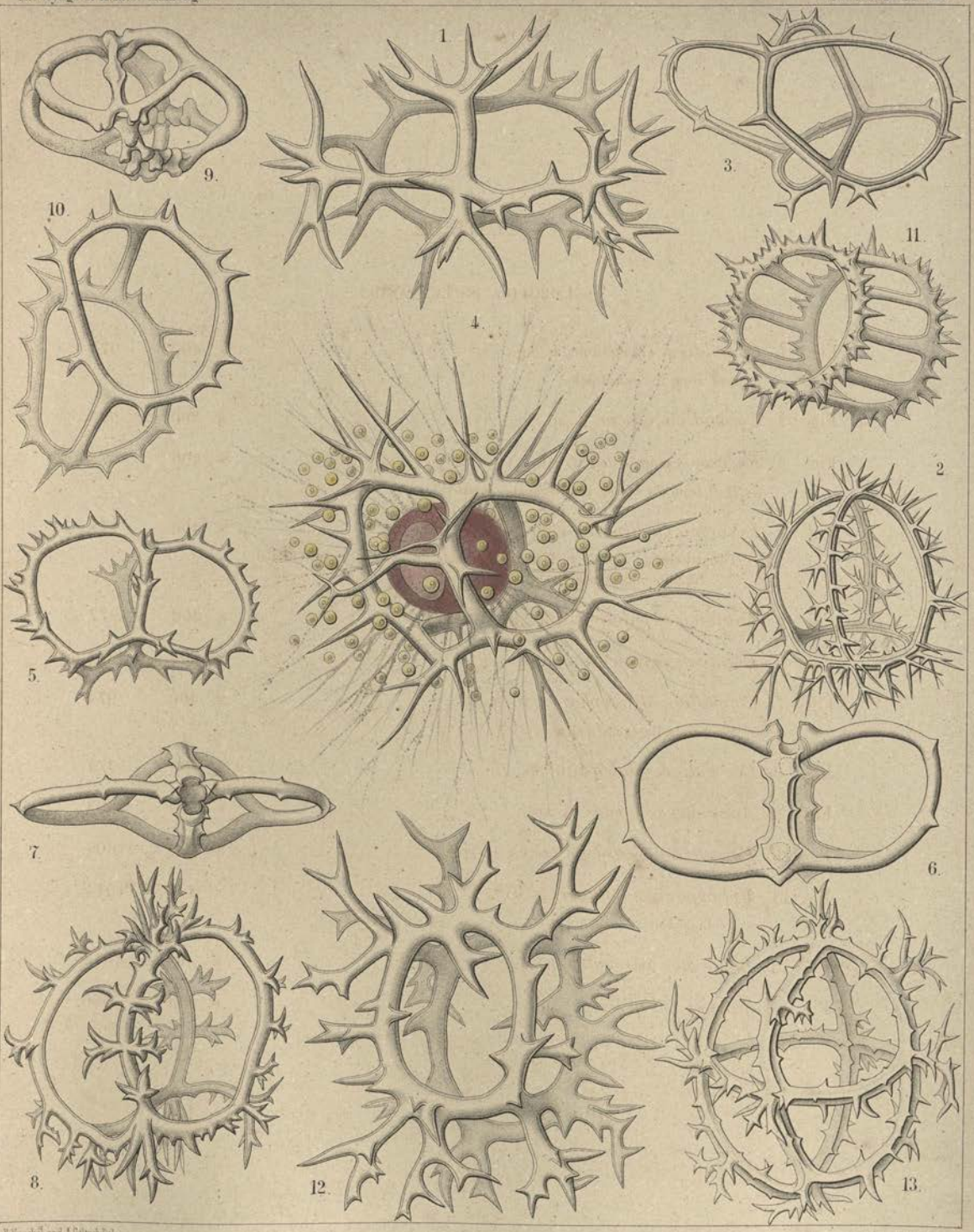
Order STEPHOIDEA.

Families CORONIDA et TYMPANIDA.

PLATE 82.

Coronida et Tympanida.

		Diam.	Page
Fig. 1.	*Coronidium cervicorne*, n. sp., Seen from the apical pole.	× 400	974
Fig. 2.	*Coronidium acacia*, n. sp.,	× 300	975
Fig. 3.	*Eucoronis angulata*, n. sp., Half from the apical, half from the dorsal side.	× 400	978
Fig. 4.	*Eucoronis challengeri*, n. sp., The red central capsule encloses a large ovate nucleus and is surrounded by numerous xanthellæ.	× 400	978
Fig. 5.	*Eucoronis nephrospyris*, n. sp.,	× 300	977
Fig. 6.	*Eucoronis perspicillum*, n. sp.,	× 300	977
Fig. 7.	*Coronidium dyostephanus*, n. sp., Seen from the apical pole.	× 400	974
Fig. 8.	*Coronidium diadema*, n. sp.,	× 300	974
Fig. 9.	*Acrocubus octopylus*, n. sp.,	× 300	993
Fig. 10.	*Parastephanus asymmetricus*, n. sp.,	× 400	1008
Fig. 11.	*Eutympanium militare*, n. sp., Oblique view.	× 400	1014
Fig. 12.	*Lithocubus astragalus*, n. sp.,	× 400	1012
Fig. 13.	*Trissocircus globus*, n. sp.,	× 400	986



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1. 2. EUCORONIS, 3.-8. LITHOCORONIS, 9.-12. TYMPANIUM, 13. TRISSOCIRCUS.

PLATE 83.

Legion NASSELLARIA.

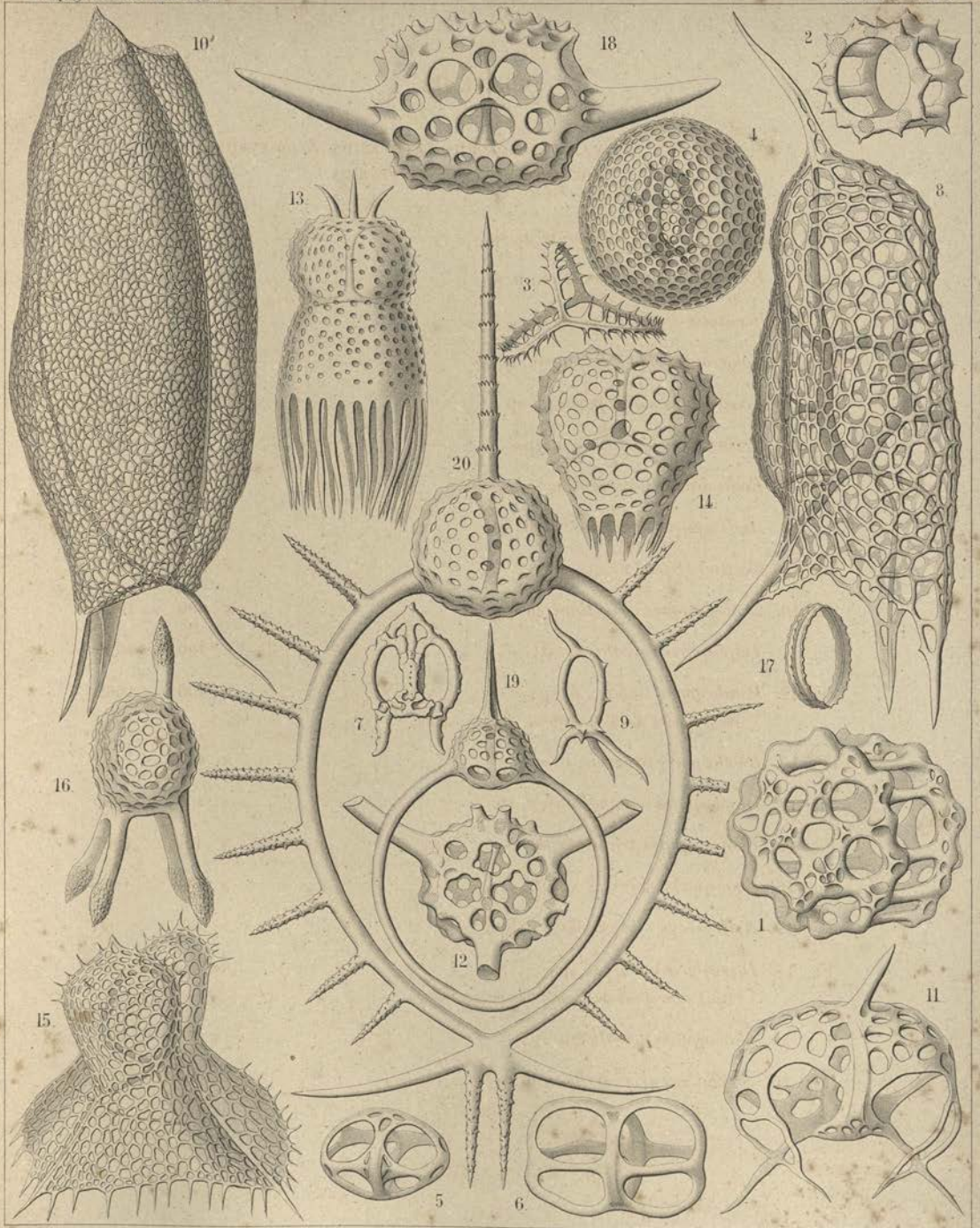
Orders STEPHOIDEA ET SPYROIDEA.

Families STEPHANIDA, SEMANTIDA, CORONIDA, TYMPANIDA, ZYGOSPYRIDA, PHORMOSPYRIDA et ANDROSPYRIDA.

PLATE 83.

Stephanida, Semantida, Coronida, Tympanida, Zygospyrida, Phormospyrida et Androspyrida.

		Diam.	Page
Fig. 1.	*Lithotympanum tuberosum*, n. sp.,	× 400	1006
Fig. 2.	*Eutympanium musicantum*, n. sp.,	× 300	1013
Fig. 3.	*Semantis distephanus*, n. sp.,	× 300	957
Fig. 4.	*Sphærospyris globosa*, n. sp.,	× 300	1100
Fig. 5.	*Trissocyclus stauroporus*, n. sp.,	× 200	987
Fig. 6.	*Trissocircus binellipsis*, n. sp.,	× 300	985
Fig. 7.	*Podocoronis toxarium*, n. sp.,	× 200	980
Fig. 8.	*Androspyris anthropiscus*, n. sp.,	× 400	1093
Fig. 9.	*Cortina tripus*, n. sp.,	× 200	950
Fig. 10.	*Cephalospyris cancellata*, n. sp.,	× 400	1035
Fig. 11.	*Tripospyris furcata*, n. sp.,	× 400	1029
Fig. 12.	*Petalospyris novena*, n. sp.,	× 400	1062
	Basal view of the shell, with the cortinar septum.		
Fig. 13.	*Rhodospyris tricornis*, n. sp.,	× 400	1089
Fig. 14.	*Desmospyris mammillata*, n. sp.,	× 400	1089
Fig. 15.	*Phormospyris tricostata*, n. sp.,	× 400	1087
Fig. 16.	*Zygospyris equus*, n. sp.,	× 300	1056
Fig. 17.	*Archicircus monostephus*, n. sp.,	× 300	941
Fig. 18.	*Dipospyris cubus*, n. sp.,	× 400	1036
	Basal view of the shell, with the cortinar septum.		
Fig. 19.	*Gamospyris circulus*, n. sp.,	× 200	1042
Fig. 20.	*Stephanospyris excellens*, n. sp.,	× 300	1043



R. Haeckel and A. Gillich Del. K. Gillich, Jena Lithogr.

1. 2 LITHOTYMPANIUM, 3 DYOSTEPHANUS, 4 SPHAEROCIRCUS, 5. 6 TRISSOCYCLUS, 7 DIPOCORONIS, 8 – 10 LAMPROSPYRIS, 11. 12 CLADOSPYRIS, 13 RHODOSPYRIS, 14. 15 DESMOSPYRIS, 16. 17 TETRASPYRIS, 18 – 20 STEPHANOSPYRIS.

PLATE 84.

Legion NASSELLARIA.

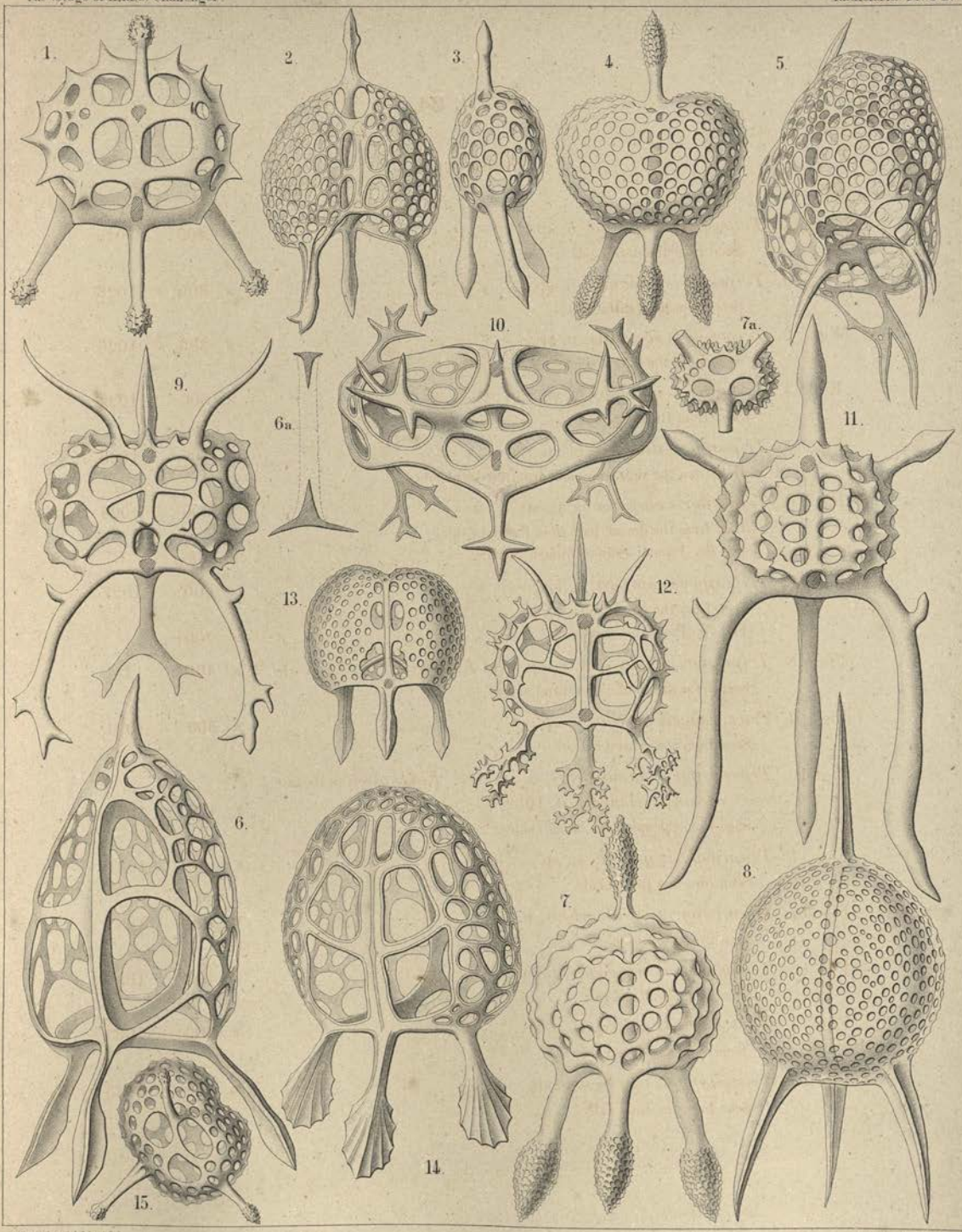
Order SPYROIDEA.

Family ZYGOSPYRIDA.

PLATE 84.

ZYGOSPYRIDA.

		Diam.	Page
Fig. 1.	*Tripospyris capitata*, n. sp., ...	× 400	1028
	Seen from the dorsal side.		
Fig. 2.	*Tripospyris semantis*, n. sp., ...	× 300	1026
	Seen from the ventral side.		
Fig. 3.	*Tripospyris semantis*, n. sp., ...	× 300	1026
	Seen from the lateral side.		
Fig. 4.	*Tripospyris eucolpos*, n. sp., ...	× 300	1029
	Seen from the dorsal side.		
Fig. 5.	*Tripospyris diomma*, n. sp., ...	× 400	1026
	Half from the right side, half from the basal side.		
Fig. 6.	*Tripospyris cortiniscus*, n. sp., ...	× 500	1026
	Half from the dorsal, half from the right side.		
	Fig. 6*a*. Frontal section through the ring, . . .	× 500	
Fig. 7.	*Tripospyris conifera*, n. sp., ...	× 400	1027
	Seen from the dorsal side.		
	Fig. 7*a*. From the basal side, ...	× 200	
Fig. 8.	*Tripospyris euscenium*, n. sp. (vel *Euscenium tripospyris*), .	× 400	1147
	Seen from the frontal or ventral side.		
Fig. 9.	*Triceraspyris gazella*, n. sp., ...	× 500	1031
	Seen from the ventral side.		
Fig. 10.	*Triceraspyris damæcornis*, n. sp. (vel *Elaphospyris damæcornis?*); compare p. 1032, ...	× 400	1057
	Seen from the apical (or basal?) side.		
Fig. 11.	*Triceraspyris giraffa*, n. sp., ...	× 400	1031
	Seen from the frontal side.		
Fig. 12.	*Triceraspyris corallorrhiza*, n. sp., ...	× 400	1031
	Seen from the frontal side.		
Fig. 13.	*Tristylospyris scaphipes*, n. sp., ...	× 400	1033
	Seen from the dorsal side.		
Fig. 14.	*Tristylospyris palmipes*, n. sp., ...	× 400	1033
	Seen from the dorsal side.		
Fig. 15.	*Tristylospyris clavipes*, n. sp., ...	× 400	1033
	Seen from the basal side.		



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1-8. TRIPODOSPYRIS, 9-12. TRICERASPYRIS, 13-15. TRISTYLOSPYRIS

PLATE 85.

Legion NASSELLARIA.

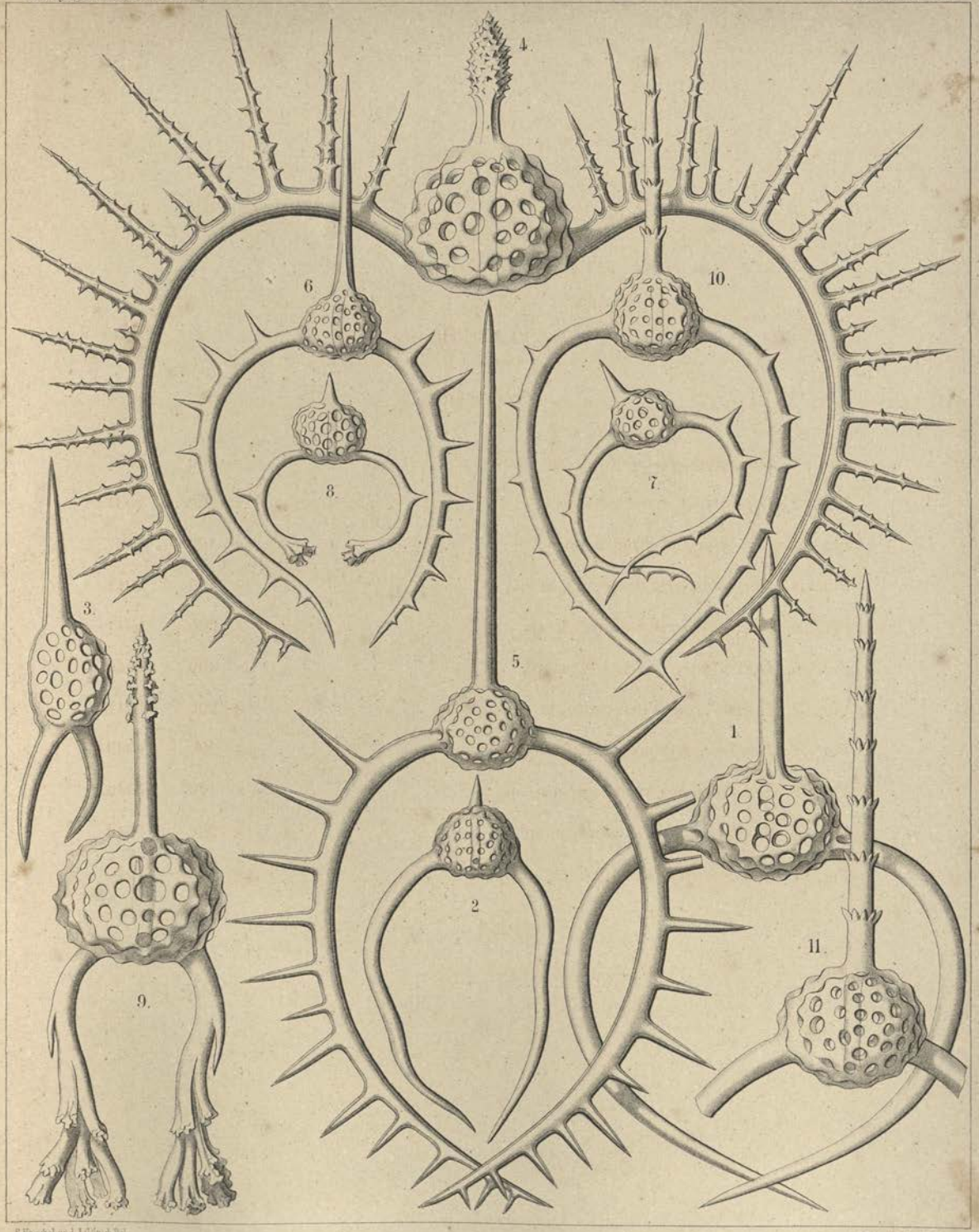
Order SPYROIDEA.

Family ZYGOSPYRIDA.

PLATE 85.

ZYGOSPYRIDA.

		Diam.	Page
Fig. 1.	*Dipospyris forcipata*, n. sp.,	× 300	1037
Fig. 2.	*Dipospyris irregularis*, n. sp.,	× 200	1037
Fig. 3.	*Dipospyris chelifer*, n. sp.,	× 300	1037
Fig. 4.	*Dorcadospyris dinoceras*, n. sp.,	× 400	1041
Fig. 5.	*Dorcadospyris antilope*, n. sp.,	× 200	1041
Fig. 6.	*Dorcadospyris dentata*, n. sp.,	× 200	1040
Fig. 7.	*Dorcadospyris decussata*, n. sp.,	× 200	1041
Fig. 8.	*Dendrospyris polyrrhiza*, n. sp.,	× 200	1039
Fig. 9.	*Dendrospyris arborescens*, n. sp.,	× 400	1040
Fig. 10.	*Stephanospyris cordata*, n. sp.,	× 200	1042
Fig. 11.	*Stephanospyris verticillata*, n. sp.,	× 300	1043



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1-3. DIPODOSPYRIS, 4-11. DORCADOSPYRIS.

PLATE 86.

Legion NASSELLARIA.

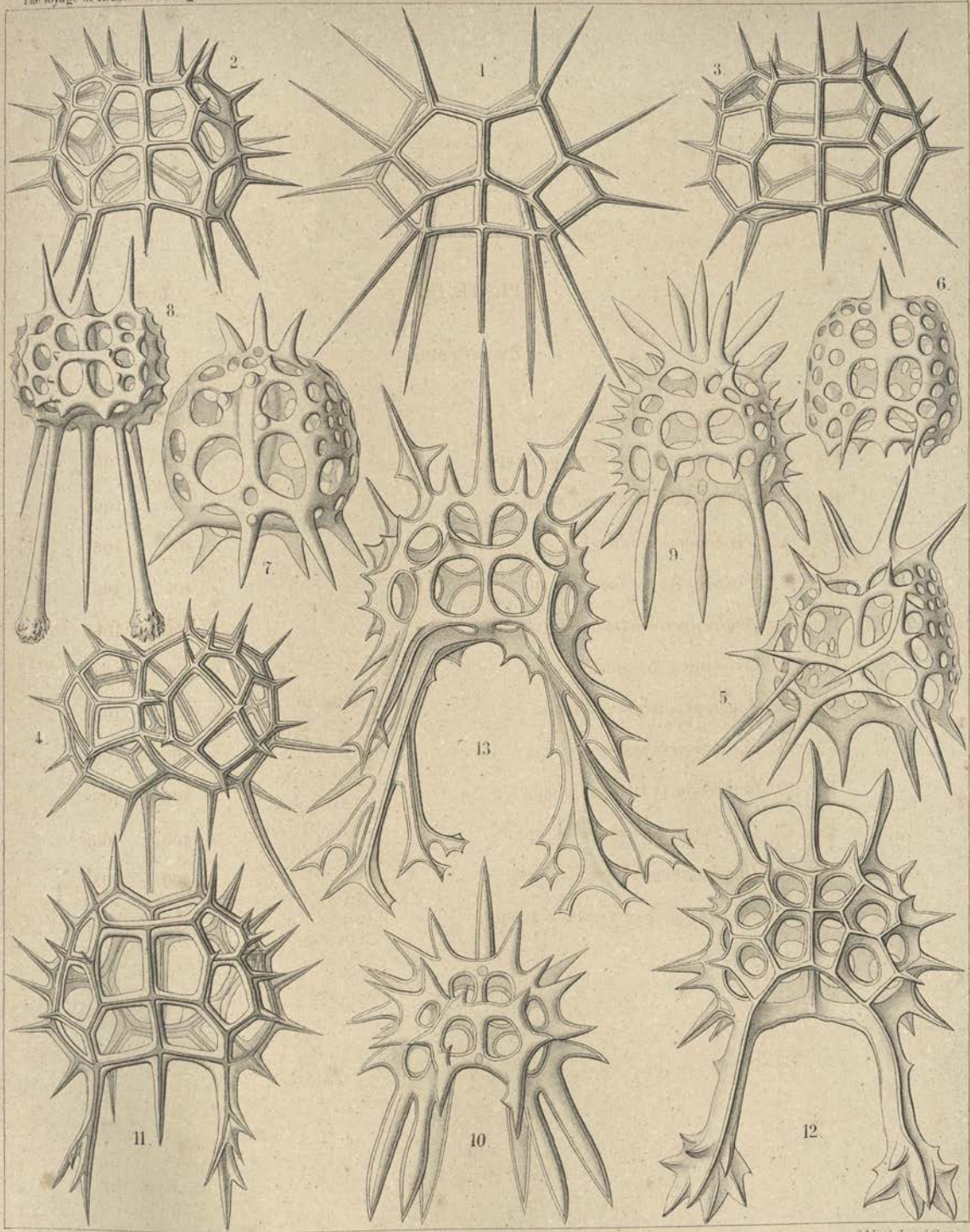
Order SPYROIDEA.

Family ZYGOSPYRIDA.

PLATE 86.

ZYGOSPYRIDA.

		Diam.	Page
Fig. 1.	*Ceratospyris polygona*, n. sp.,	× 400	1066
Fig. 2.	*Ceratospyris strasburgeri*, n. sp.;	× 400	1067
Fig. 3.	*Ceratospyris allmersii*, n. sp.,	× 400	1067
Fig. 4.	*Ceratospyris mulderi*, n. sp.,	× 400	1067
Fig. 5.	*Anthospyris aculeata*, n. sp.,	× 400	1065
Fig. 6.	*Petalospyris dictyocubus*, n. sp.,	× 400	1063
Fig. 7.	*Liriospyris hexapoda*, n. sp.,	× 400	1049
Fig. 8.	*Aegospyris caprina*, n. sp.,	× 400	1054
Fig. 9.	*Ceratospyris preyeri*, n. sp.,	× 400	1068
Fig. 10.	*Ceratospyris krausei*, n. sp.,	× 400	1068
Fig. 11.	*Ceratospyris carnerii*, n. sp.,	× 400	1069
Fig. 12.	*Elaphospyris alcicornis*, n. sp.,	× 400	1057
Fig. 13.	*Elaphospyris cervicornis*, n. sp.,	× 400	1057



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1-7. CERATOSPYRIS. 8-13. ELAPHOSPYRIS.

PLATE 87.

Legion NASSELLARIA.

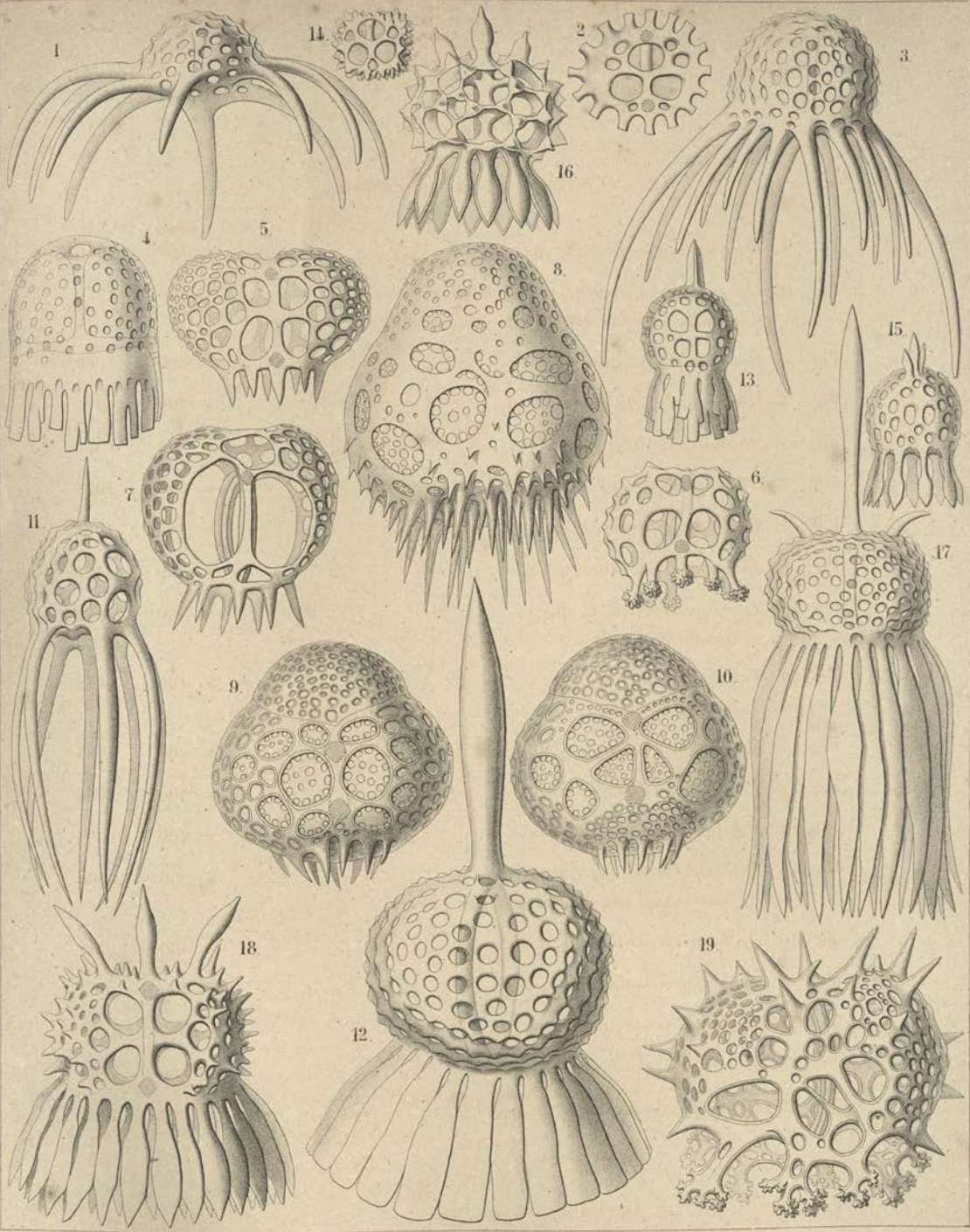
Order SPYROIDEA.

Families ZYGOSPYRIDA et THOLOSPYRIDA.

PLATE 87.

ZYGOSPYRIDA et THOLOSPYRIDA.

		Diam.	Page
Fig. 1.	*Gorgospyris medusa*, n. sp.,	× 300	1070
Fig. 2.	*Gorgospyris medusetta*, n. sp.,	× 300	1070
	From the basal side, with the nine cortinar pores.		
Fig. 3.	*Gorgospyris polypus*, n. sp.,	× 300	1070
Fig. 4.	*Gorgospyris schizopodia*, n. sp.,	× 400	1071
Fig. 5.	*Gorgospyris eurycolpos*, n. sp.,	× 300	1071
Fig. 6.	*Gorgospyris liriope*, n. sp.,	× 300	1071
Fig. 7.	*Tiarospyris pervia*, n. sp.,	× 400	1082
Fig. 8.	*Tiarospyris amphora*, n. sp.,	× 400	1083
Fig. 9.	*Tiarospyris mitra*, n. sp.,	× 400	1082
	From the ventral side.		
Fig. 10.	*Tiarospyris mitra*, n. sp.,	× 400	1082
	From the dorsal side.		
Fig. 11.	*Petalospyris octopus*, n. sp.,	× 400	1061
Fig. 12.	*Petalospyris dinoceras*, n. sp.,	× 400	1063
Fig. 13.	*Petalospyris lobata*, n. sp.,	× 300	1064
Fig. 14.	*Petalospyris triomma*, n. sp.,	× 200	1060
	From the basal side, with the six cortinar pores.		
Fig. 15.	*Anthospyris spathulata*, n. sp.,	× 400	1065
Fig. 16.	*Anthospyris mammillata*, n. sp.,	× 400	1064
Fig. 17.	*Anthospyris tragopogon*, n. sp.,	× 300	1066
Fig. 18.	*Anthospyris doronicum*, n. sp.,	× 300	1065
Fig. 19.	*Ceratospyris calorrhiza*, n. sp.,	× 400	1069



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1-6. GORGOSPYRIS, 7-10. TIAROSPYRIS, 11-14. PETALOSPYRIS,
15-19. ANTHOSPYRIS.

PLATE 88.

Legion NASSELLARIA.

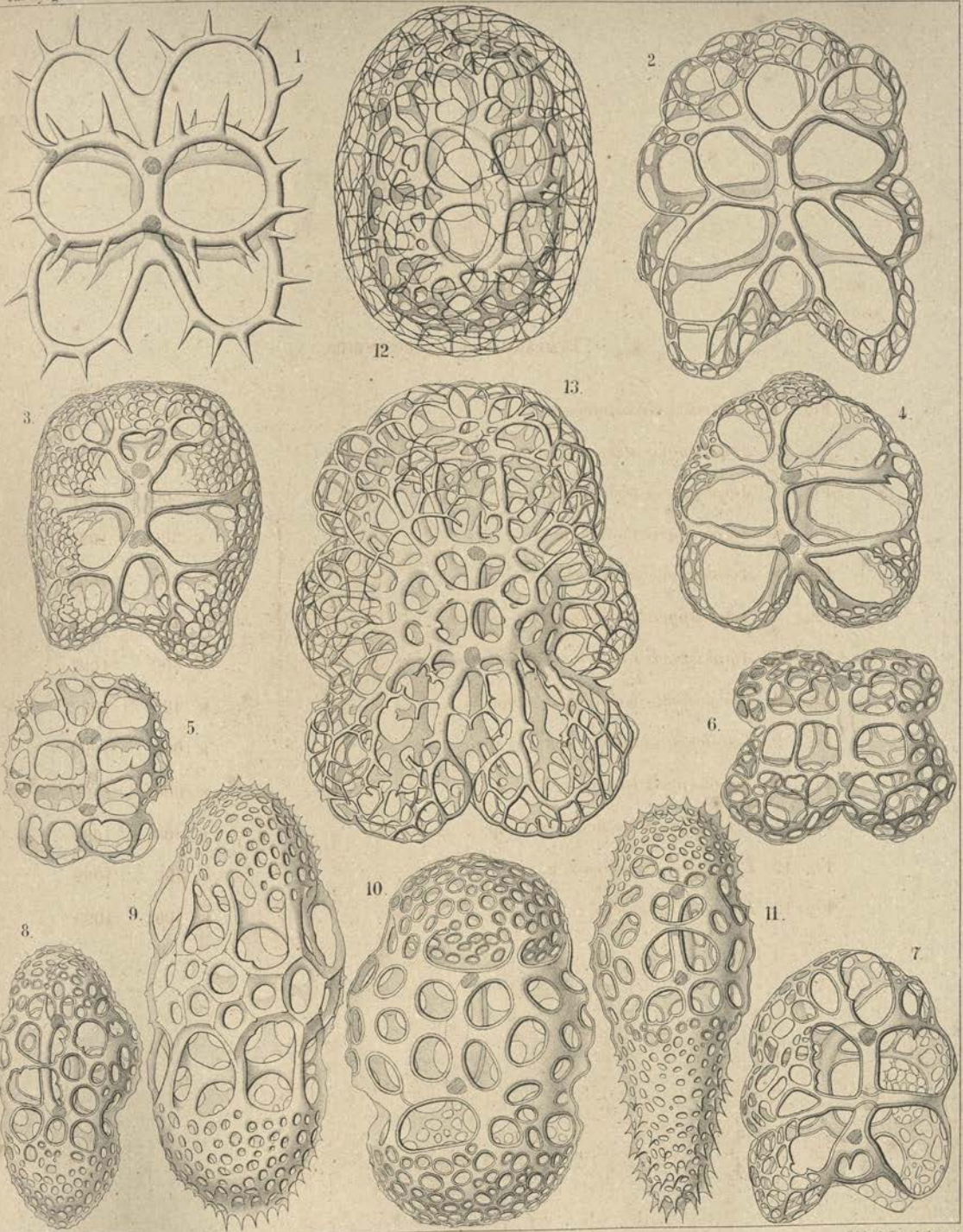
Orders STEPHOIDEA ET SPYROIDEA.

Families TYMPANIDA et ANDROSPYRIDA.

PLATE 88.

TYMPANIDA et ANDROSPYRIDA.

		Diam.	Page
Fig. 1.	*Toxarium circospyris*, n. sp.,	× 400	995
Fig. 2.	*Amphispyris sternalis*, n. sp.,	× 300	1096
Fig. 3.	*Amphispyris costata*, n. sp.,	× 300	1097
Fig. 4.	*Amphispyris thorax*, n. sp.,	× 300	1096
Fig. 5.	*Amphispyris subquadrata*, n. sp.,	× 300	1097
Fig. 6.	*Amphispyris quadrigemina*, n. sp.,	× 300	1096
Fig. 7.	*Amphispyris toxarium*, n. sp.,	× 300	1097
Fig. 8.	*Tricolospyris baconiana*, n. sp.,	× 400	1098
Fig. 9.	*Tricolospyris leibnitziana*, n. sp.,	× 600	1098
Fig. 10.	*Tricolospyris kantiana*, n. sp.,	× 600	1098
Fig. 11.	*Tricolospyris newtoniana*, n. sp.,	× 400	1098
Fig. 12.	*Perispyris lentellipsis*, n. sp.,	× 400	1099
Fig. 13.	*Perispyris bicincta*, n. sp.,	× 400	1099



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1. CIRCOSPYRIS, 2–7. AMPHISPYRIS, 8.–11. TRICOLOSPYRIS,
12.13. PERISPYRIS.

PLATE 89.

Legion NASSELLARIA.

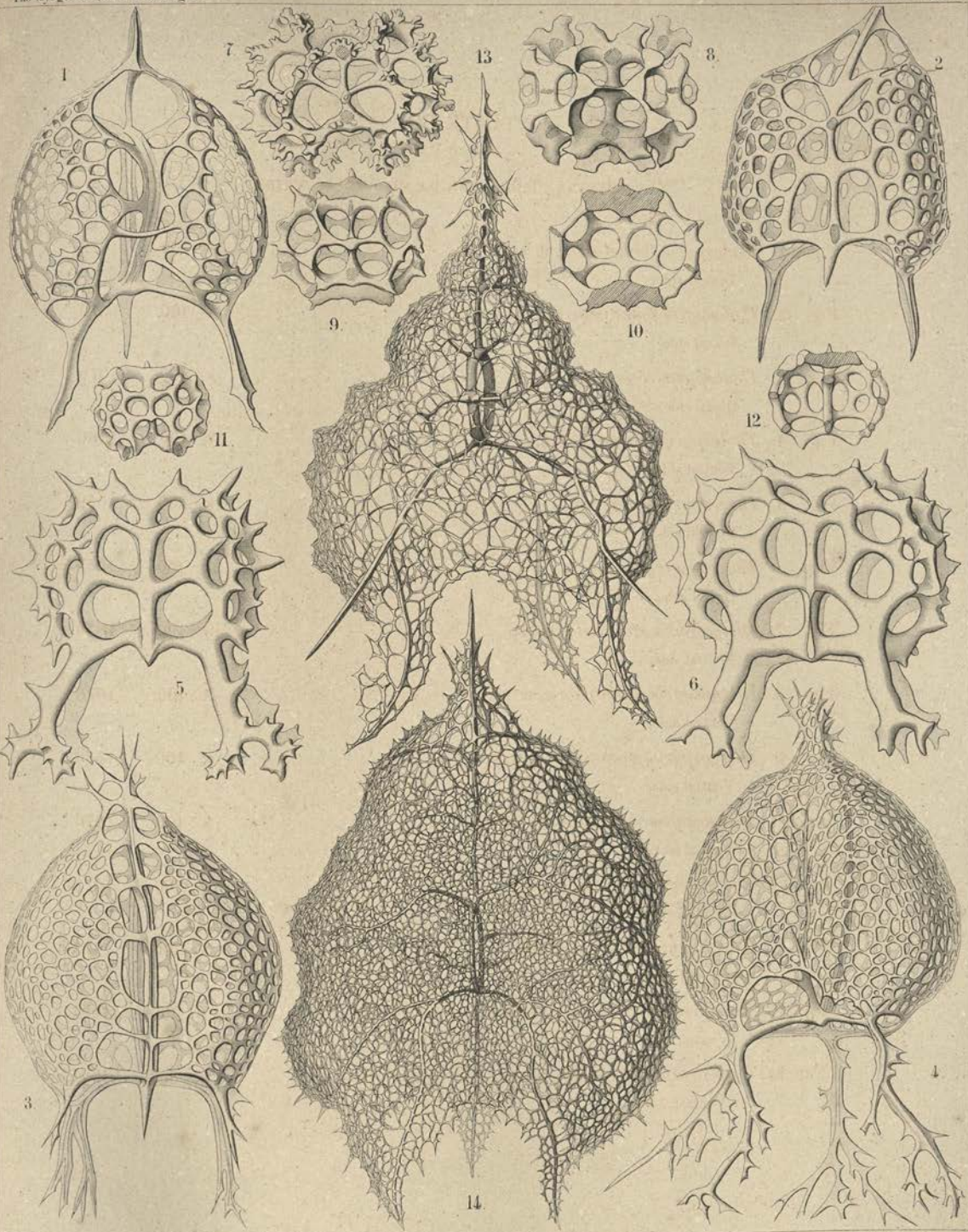
Order SPYROIDEA.

Families ZYGOSPYRIDA, THOLOSPYRIDA et ANDROSPYRIDA.

PLATE 89.

ZYGOSPYRIDA, THOLOSPYRIDA et ANDROSPYRIDA.

		Diam.	Page
Fig. 1.	*Tholospyris tripodiscus*, n. sp., Ventral side.	× 400	1079
Fig. 2.	*Tholospyris fenestrata*, n. sp., Dorsal side.	× 400	1079
Fig. 3.	*Tholospyris ramosa*, n. sp., Dorsal side.	× 400	1079
Fig. 4.	*Tholospyris cupola*, n. sp., Ventral side.	× 400	1080
Fig. 5.	*Therospyris leo*, n. sp., Ventral side.	× 400	1059
Fig. 6.	*Therospyris felis*, n. sp., Dorsal side.	× 400	1059
Fig. 7.	*Dictyospyris stalactites*, n. sp., Ventral side.	× 400	1073
Fig. 8.	*Dictyospyris anthophora*, n. sp., Ventral side.	× 400	1076
Fig. 9.	*Dictyospyris mammillaris*, n. sp., Ventral side.	× 400	1076
Fig. 10.	*Dictyospyris mammillaris*, n. sp., Frontal section.	× 400	1076
Fig. 11.	*Dictyospyris distoma*, n. sp., Ventral side.	× 300	1073
Fig. 12.	*Dictyospyris distoma*, n. sp., Frontal section.	× 300	1073
Fig. 13.	*Lamprospyris darwinii*, n. sp., Ventral side.	× 300	1094
Fig. 14.	*Lamprospyris huxleyi*, n. sp., Ventral side.	× 300	1094



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1-4. THOLOSPYRIS, 5.6. TESSARASPYRIS, 7-12. DICTYOSPYRIS
13.14. LAMPROSPYRIS.

PLATE 90.

Legion NASSELLARIA.

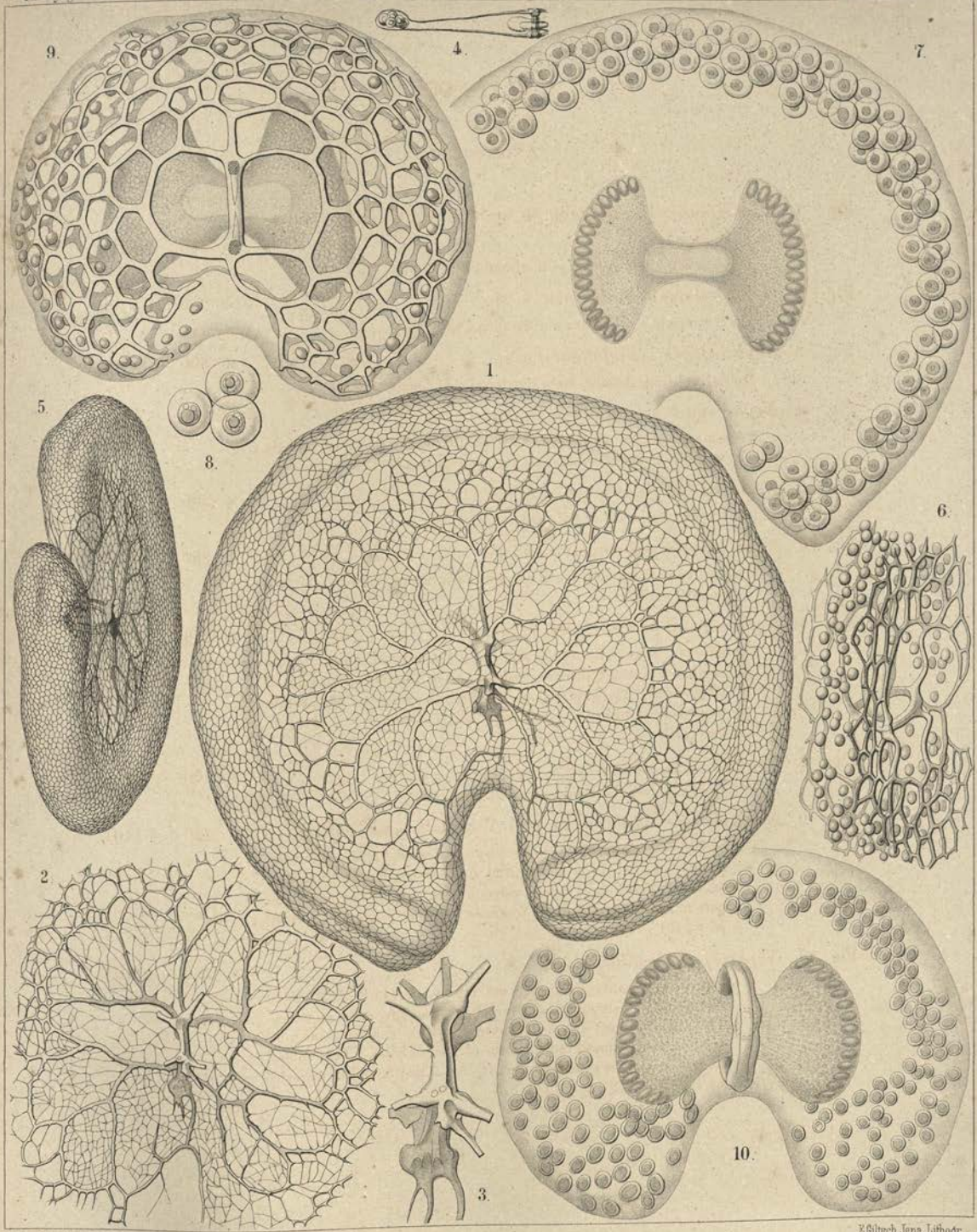
Order SPYROIDEA.

Family ANDROSPYRIDA.

PLATE 90.

ANDROSPYRIDA.

		Diam.	Page
Fig. 1.	*Nephrospyris paradictyum*, n. sp. (vel *Paradictyum paradoxum*), ...	× 250	1102
	The complete shell, seen from the frontal side.		
Fig. 2.	*Nephrospyris paradictyum*, n. sp., ...	× 250	1102
	The incomplete shell, seen from the dorsal side.		
Fig. 3.	*Nephrospyris paradictyum*, n. sp., ...	× 500	1102
	The sagittal ring, isolated, from the dorsal side; more enlarged.		
Fig. 4.	*Nephrospyris paradictyum*, n. sp., ...	× 120	1102
	Vertical section through half the shell, exhibiting the thickened margin with the included symbiontes (compare page 1101).		
Fig. 5.	*Nephrospyris paradictyum*, n. sp., ...	× 200	1102
	Oblique marginal view of the shell.		
Fig. 6.	*Nephrospyris paradictyum*, n. sp., ...	× 250	1102
	Marginal view of a young specimen, with open fissure between the two parallel net-plates.		
Fig. 7.	*Nephrospyris paradictyum*, n. sp., ...	× 250	1102
	The soft body alone, without the skeleton. The bilobed central capsule exhibits a central transverse nucleus, and on each lobe a stratum of oil-globules. The kidney-shaped calymma contains on the margin numerous symbiontes (*Xanthellæ* or *Vorticellinæ?* Compare page 1102).		
Fig. 8.	*Nephrospyris paradictyum*, n. sp., ...	× 500	1102
	Three single unicellular symbiontes (*Zooxanthellæ?*).		
Fig. 9.	*Nephrospyris renilla*, n. sp. (vel *Nephrodictyum renilla*), .	× 250	1101
	The bilobed central capsule is enclosed by the discoidal shell and in the middle constricted by the sagittal ring; it contains a transverse nucleus. The kidney-shaped calymma contains in the peripheral part numerous symbiontes (*Xanthellæ* or *Vorticellinæ?* Compare page 1101).		
Fig. 10.	*Nephrospyris renilla*, n. sp., ...	× 250	1101
	A singular abnormality (occurring not rarely), in which the reduced skeleton has nearly disappeared and the sagittal ring alone remained. The kidney-shaped calymma, however, which encloses numerous symbiontes, has preserved the form of the skeleton. The bilobed central capsule is similar to that in figs. 7 and 9, and is encircled by the thickened sagittal ring.		



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PARADICTYUM.

PLATE 91.

Legion NASSELLARIA.

Orders NASSOIDEA ET PLECTOIDEA.

Families NASSELLIDA, PLAGONIDA et PLECTANIDA.

PLATE 91.

NASSELLIDA, PLAGONIDA et PLECTANIDA.

		Diam.	Page
Fig. 1.	*Cystidium princeps*, n. sp., ...	× 400	897
Fig. 2.	*Triplagia primordialis*, n. sp., ...	× 100	909
Fig. 3.	*Tetraplagia phœnaxonia*, n. sp., ...	× 200	911
Fig. 4.	*Plagoniscus tripodiscus*, n. sp., ...	× 200	912
Fig. 5.	*Plagiocarpa procortina*, n. sp., ...	× 300	914
Fig. 6.	*Plagonium sphærozoum*, n. sp., ...	× 300	916
Fig 7.	*Triplecta triactis*, n. sp., ...	× 300	922
Fig. 8.	*Tetraplecta pinigera*, n. sp., ...	× 300	924
Fig. 9.	*Plectaniscus cortiniscus*, n. sp., ...	× 300	925
Fig. 10.	*Periplecta cortina*, n. sp., ...	× 400	926
Fig. 11.	*Plectanium trigeminum*, n. sp., ...	× 400	928
Fig. 12.	*Polyplecta heptacantha*, n. sp., ...	× 300	929

E. Haeckel and A. Giltsch Del.

A. Giltsch, Jena, Lithogr.

1. CYSTIDIUM. 2–6. PLAGONIDA. 7–12. PLECTANIDA.

PLATE 92.

Legion NASSELLARIA.

Order STEPHOIDEA.

Families STEPHANIDA et SEMANTIDA.

PLATE 92.

Stephanida et Semantida.

		Diam.	Page
Fig. 1.	*Semantis sigillum*, n. sp.,	× 400	957
Fig. 2.	*Semantis biforis*, n. sp.,	× 300	956
Fig. 3.	*Semantrum tetrastoma*, n. sp.,	× 300	959
Fig. 4.	*Semantrum signarium*, n. sp.,	× 400	960
Fig. 5.	*Semantrum quadrifore*, n. sp.,	× 400	958
Fig. 6.	*Semantidium hexastoma*, n. sp.,	× 400	960
Fig. 7.	*Semantidium signatorium*, n. sp.,	× 400	961
Fig. 8.	*Clathrocircus stapedius*, n. sp.,	× 400	962
Fig. 9.	*Clathrocircus dictyospyris*, n. sp.,	× 300	963
Fig. 10.	*Clathrocircus multiforis*, n. sp.,	× 300	963
Fig. 11.	*Cortiniscus tripodiscus*, n. sp.,	× 400	963
Fig. 12.	*Cortiniscus typicus*, n. sp.,	× 300	964
Fig. 13.	*Cortiniscus dipylaris*, n. sp.,	× 400	964
Fig. 14.	*Stephaniscus quadrifurcus*, n. sp.,	× 300	965
Fig. 15.	*Stephaniscus quadrigatus*, n. sp.,	× 400	965
Fig. 16.	*Semantiscus hexapodius*, n. sp.,	× 400	966
Fig. 17.	*Semantiscus hexapylus*, n. sp.,	× 400	967
Fig. 18.	*Semantiscus hexaspyris*, n. sp.,	× 400	966
Fig. 19.	*Lithocircus tarandus*, n. sp.,	× 400	944
Fig. 20.	*Stephanium quadrupes*, n. sp.,	× 200	952
Fig. 21.	*Cortina cervina*, n. sp.,	× 300	952

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1-7. SEMANTIS, 8-10. CLATHROCIRCUS, 11-13. CORTINISCUS,
14-15. STEPHANISCUS, 16-19, SEMANTISCUS, 20-21. STEPHANIUM.

PLATE 93.

Legion NASSELLARIA.

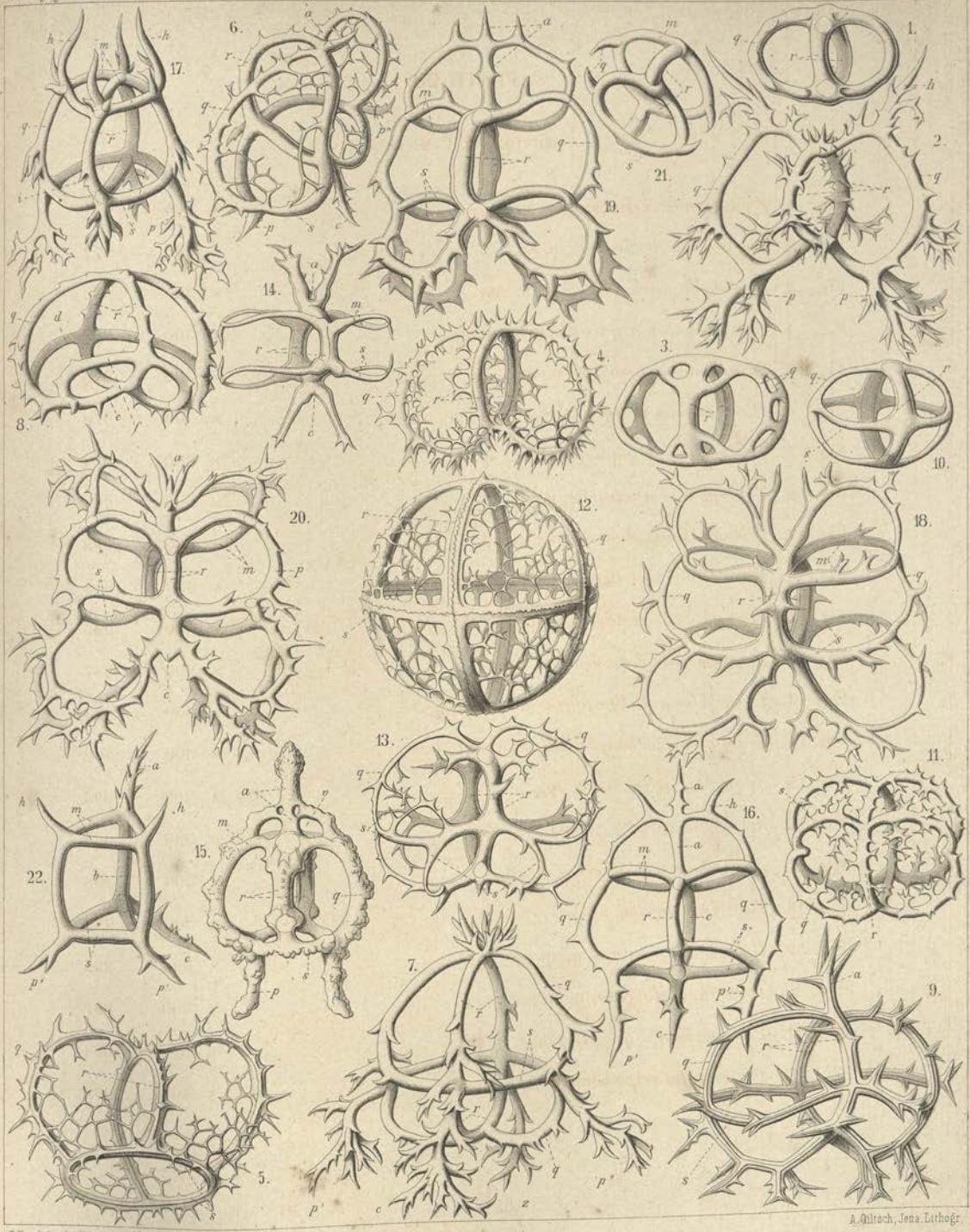
Order STEPHOIDEA.

Families CORONIDA et TYMPANIDA.

PLATE 93.

Coronida et Tympanida.

		Diam.	Page
Fig. 1.	*Zygostephanus dissocircus*, n. sp.,	× 300	971
Fig. 2.	*Zygostephanus bicornis*, n. sp.,	× 300	972
Fig. 3.	*Zygostephanium dizonium*, n. sp.,	× 300	973
Fig. 4.	*Zygostephanium paradictyum*, n. sp.,	× 300	973
Fig. 5.	*Acanthodesmia corona*, n. sp.,	× 400	976
Fig. 6.	*Plectocoronis pentacantha*, n. sp.,	× 300	979
Fig. 7.	*Tristephanium quadricorne*, n. sp.,	× 300	984
Fig. 8.	*Tristephanium octopyle*, n. sp.,	× 300	983
Fig. 9.	*Tristephanium dimensivum*, n. sp.,	× 400	983
Fig. 10.	*Trissocircus lentellipsis*, n. sp.,	× 300	985
Fig. 11.	*Trissocircus octostoma*, n. sp.,	× 300	986
Fig. 12.	*Trissocyclus sphæridium*, n. sp.,	× 300	987
Fig. 13.	*Tricyclidium dictyospyris*, n. sp.,	× 300	984
Fig. 14.	*Protympanium amphipodium*, n. sp.,	× 300	992
Fig. 15.	*Acrocubus arcuatus*, n. sp.,	× 300	993
Fig. 16.	*Acrocubus cortina*, n. sp.,	× 300	994
Fig. 17.	*Acrocubus amphithectus*, n. sp.,	× 300	995
Fig. 18.	*Toxarium thorax*, n. sp.,	× 300	996
Fig. 19.	*Toxarium cordatum*, n. sp.,	× 300	996
Fig. 20.	*Toxarium bifurcum*, n. sp.,	× 300	997
Fig. 21.	*Parastephanus quadrispinus*, n. sp.,	× 300	1008
Fig. 22.	*Prismatium tripodium*, n. sp.,	× 300	1009



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1-4. ZYGOSTEPHANUS, 5-6. ACANTHODESMIA, 7-13. TRISTEPHANIUM,
14-17. ACROCUBUS, 18-20. TOXARIUM, 21.22. PRISMATIUM.

PLATE 94.

Legion NASSELLARIA.

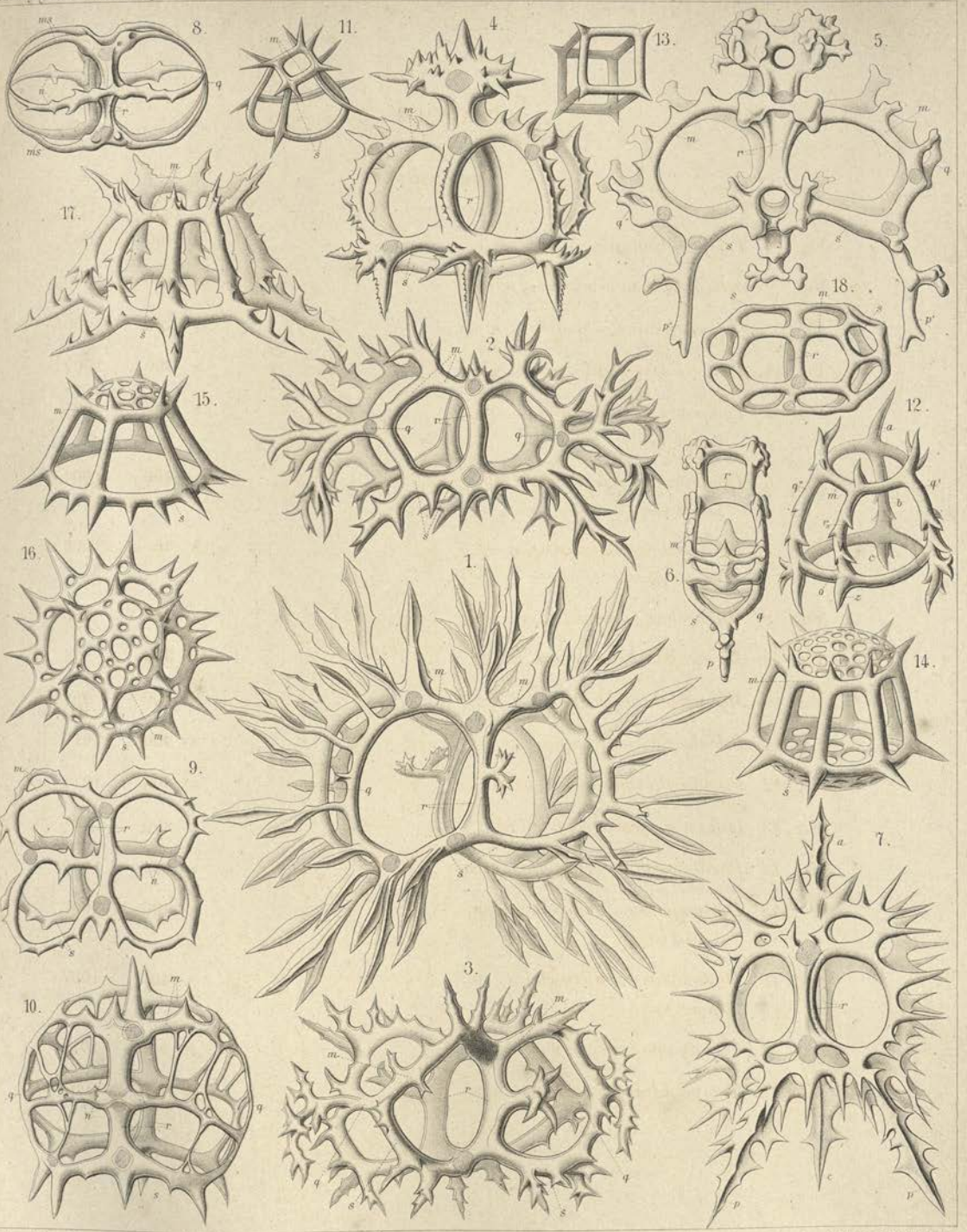
Order STEPHOIDEA.

Family TYMPANIDA.

PLATE 94.

TYMPANIDA.

		Diam.	Page
Fig. 1.	*Tympanidium foliosum*, n. sp.,	× 400	1003
Fig. 2.	*Octotympanum cervicorne*, n. sp.,	× 400	1000
Fig. 3.	*Octotympanum octonarium*, n. sp.,	× 400	1000
Fig. 4.	*Tympaniscus quadrupes*, n. sp.,	× 400	1002
Fig. 5.	*Tympaniscus dipodiscus*, n. sp., Frontal view.	× 400	1001
Fig. 6.	*Tympaniscus dipodiscus*, n. sp., Lateral view.	× 400	1001
Fig. 7.	*Tympaniscus tripodiscus*, n. sp., Frontal view.	× 400	1002
Fig. 8.	*Microcubus zonarius*, n. sp.,	× 300	998
Fig. 9.	*Microcubus dodecastoma*, n. sp.,	× 300	998
Fig. 10.	*Microcubus amphispyris*, n. sp.,	× 400	999
Fig. 11.	*Pseudocubus obeliscus*, n. sp.,	× 400	1010
Fig. 12.	*Pseudocubus hexapylus*, n. sp.,	× 300	1011
Fig. 13.	*Lithocubus geometricus*, n. sp.,	× 200	1011
Fig. 14.	*Paratympanum octostylum*, n. sp.,	× 400	1005
Fig. 15.	*Dystympanium dictyocha*, n. sp., Lateral view.	× 400	1007
Fig. 16.	*Dystympanium dictyocha*, n. sp., Apical view.	× 400	1007
Fig. 17.	*Circotympanum octogonium*, n. sp.,	× 500	1013
Fig. 18.	*Tympanidium binoctonum*, n. sp.,	× 400	1004



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1–3, 18. TYMPANIDIUM, 4–7. TYMPANISCUS, 8–10. MICROCUBUS.
11–13. LITHOCUBUS, 14. PARATYMPANIUM, 15–17. DYSTYMPANIUM.

PLATE 95.

Legion NASSELLARIA.

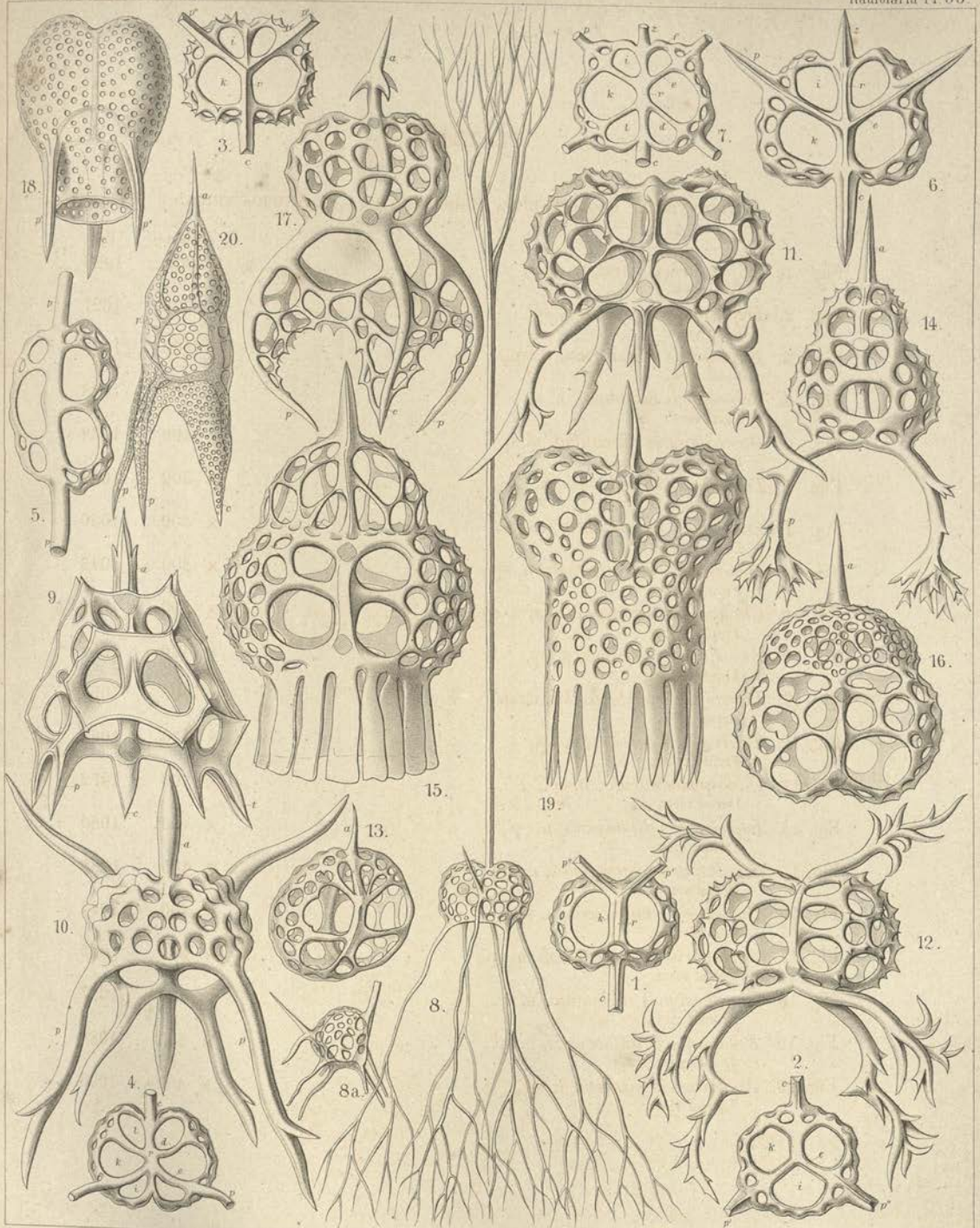
Order SPYROIDEA.

Families ZYGOSPYRIDA, THOLOSPYRIDA, PHORMOSPYRIDA et ANDROSPYRIDA.

PLATE 95.

ZYGOSPYRIDA, THOLOSPYRIDA, PHORMOSPYRIDA et ANDROSPYRIDA.

		Diam.	Page
Fig. 1.	*Tripospyris cortina*, n. sp., Basal view.	× 300	1025
Fig. 2.	*Tripospyris triplecta*, n. sp., Basal view.	× 300	1027
Fig. 3.	*Tripospyris semantrum*, n. sp., Basal view.	× 400	1027
Fig. 4.	*Tripospyris hexomma*, n. sp., Basal view.	× 300	1028
Fig. 5.	*Brachiospyris diacantha*, n. sp. Basal view.	× 400	1038
Fig. 6.	*Tetraspyris stephanium*, n. sp., Basal view.	× 300	1044
Fig. 7.	*Liriospyris amphithecta*, n. sp., Basal view.	× 300	1050
Fig. 8.	*Hexaspyris hexacorethra*, n. sp., Frontal view.	× 300	1048
Fig. 9.	*Clathrospyris pyramidalis*, n. sp., Frontal view.	× 500	1052
Fig. 10.	*Aegospyris aegoceras*, n. sp., Frontal view.	× 400	1054
Fig. 11.	*Pentaspyris pentacantha*, n. sp., Dorsal view.	× 400	1054
Fig. 12.	*Taurospyris cervina*, n. sp., Frontal view.	× 400	1058
Fig. 13.	*Circospyris nucula*, n. sp., Dorsal view.	× 300	1072
Fig. 14.	*Lophospyris dipodiscus*, n. sp., Frontal view.	× 400	1080
Fig. 15.	*Sepalospyris platyphylla*, n. sp., Dorsal view.	× 400	1081
Fig. 16.	*Pylospyris canariensis*, n. sp., Frontal view.	× 400	1084
Fig. 17.	*Acrospyris clathrocanium*, n. sp., Dorsal view.	× 300	1085
Fig. 18.	*Phormospyris tridentata*, n. sp., Frontal view.	× 400	1087
Fig. 19.	*Patagospyris anthocyrtis*, n. sp., Dorsal view.	× 500	1088
Fig. 20.	*Androspyris pithecus*, n. sp., Lateral view.	× 400	1093



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1–13. ZYGOSPYRIS, 14–16. THOLOSPYRIS, 17–19. PHORMOSPYRIS, 20. ANDROSPYRIS.

PLATE 96.

Legion NASSELLARIA.

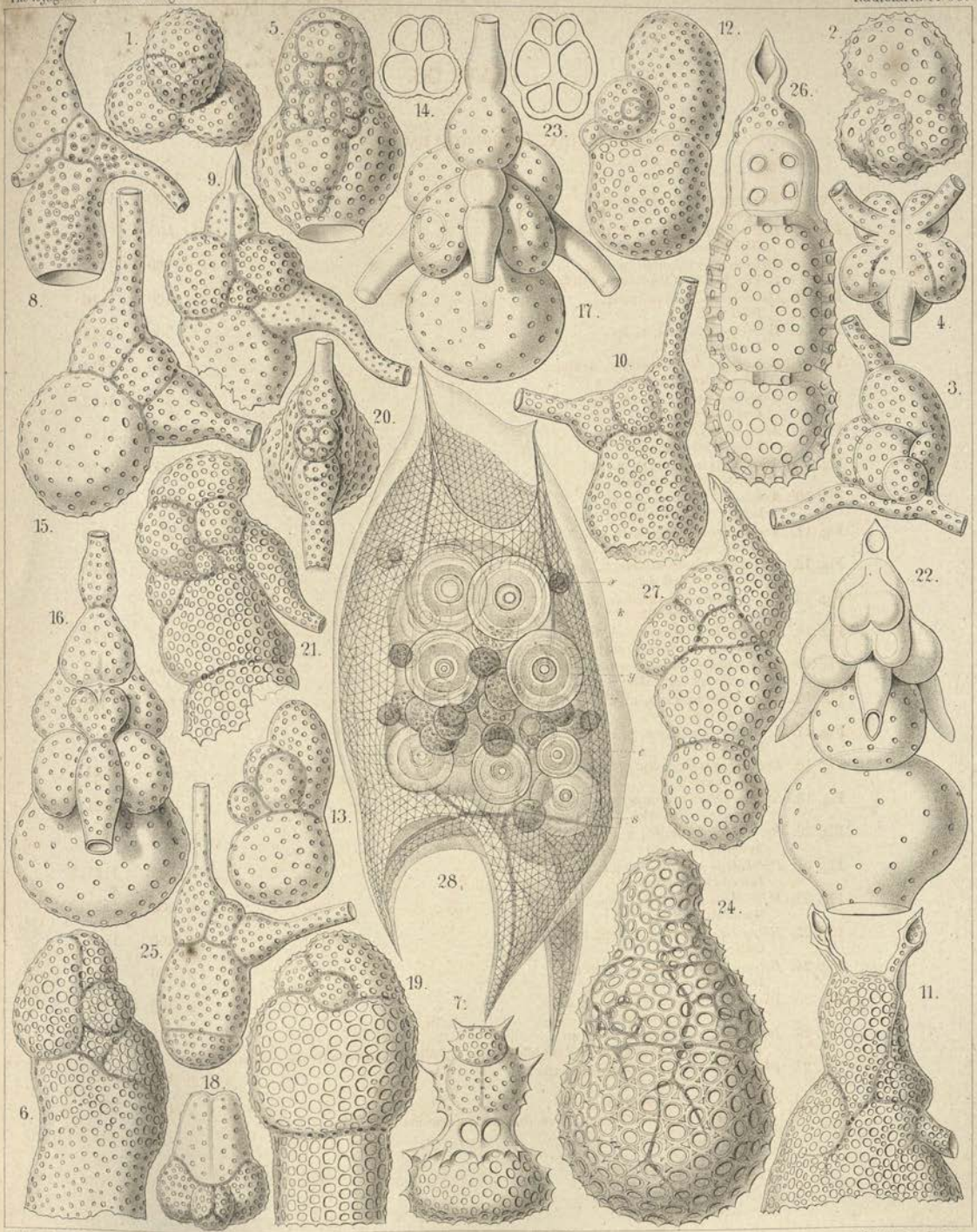
Order BOTRYODEA.

Families CANNOBOTRYIDA, LITHOBOTRYIDA et PYLOBOTRYIDA.

PLATE 96.

CANNOBOTRYIDA, LITHOBOTRYIDA et PYLOBOTRYIDA.

		Diam.	Page
Fig. 1.	*Botryopera cyrtoloba*, n. sp., Apical view.	× 500	1108
Fig. 2.	*Botryopera quinqueloba*, n. sp., Half lateral, half frontal view.	× 500	1109
Fig. 3.	*Cannobotrys tricanna*, n. sp., View half from the frontal, half from the left side.	× 400	1110
Fig. 4.	*Cannobotrys cortina*, n. sp., Basal view.	× 400	1110
Fig. 5.	*Botryopyle inclusa*, n. sp., Frontal view.	× 500	1113
Fig. 6.	*Botryopyle dictyocephalus*, n. sp., Lateral view (right side).	× 500	1113
Fig. 7.	*Botryopyle sethocorys*, n. sp., Frontal view.	× 400	1112
Fig. 8.	*Acrobotrys trisolenia*, n. sp., Lateral view (right side).	× 400	1115
Fig. 9.	*Acrobotrys acuminata*, n. sp., Lateral view (right side).	× 400	1115
Fig. 10.	*Acrobotrys disolenia*, n. sp., Lateral view (left side).	× 400	1114
Fig. 11.	*Acrobotrys auriculata*, n. sp., Lateral view (right side).	× 500	1115
Fig. 12.	*Botryocella multicellaris*, n. sp., Lateral view (left side).	× 500	1117
Fig. 13.	*Botryocella quadricellaris*, n. sp., Lateral view (left side).	× 400	1117
Fig. 14.	*Botryocella quadrigemina*, n. sp., Collar septum, between cephalis and thorax.	× 400	1117
Fig. 15.	*Lithobotrys sphærothorax*, n. sp., Lateral view (right side).	× 500	1119
Fig. 16.	*Lithobotrys mascula*, n. sp., Frontal view.	× 500	1119
Fig. 17.	*Lithobotrys orchidea*, n. sp., Frontal view.	× 500	1119
Fig. 18.	*Botryocyrtis cerebellum*, n. sp., Apical view.	× 400	1121
Fig. 19.	*Botryocyrtis theocampe*, n. sp., Lateral view (left side).	× 500	1121
Fig. 20.	*Pylobotrys fontinalis*, n. sp., Apical view.	× 400	1122
Fig. 21.	*Pylobotrys putealis*, n. sp., Lateral view (right side).	× 500	1121
Fig. 22.	*Pylobotrys cerebralis*, n. sp., Dorsal view.	× 500	1122
Fig. 23.	*Botryocampe rotalia*, n. sp., Collar septum.	× 400	1123
Fig. 24.	*Botryocampe camerata*, n. sp., Lateral view (left side).	× 500	1124
Fig. 25.	*Phormobotrys cannothalamia*, n. sp., Lateral view (right side).	× 400	1125
Fig. 26.	*Phormobotrys trithalamia*, n. sp., Frontal section. The dorsal wall is visible, in the cephalis the cruciform frontal septum.	× 500	1124
Fig. 27.	*Phormobotrys pentathalamia*, n. sp., Lateral view (left side).	× 400	1124
Fig. 28.	*Cephalospyris triangulata*, n. sp., The central capsule encloses numerous spherical concrements.	× 400	1035



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1-4 BOTRYOPERA, 5-11. BOTRYOPYLE, 12-17. BOTRYOCELLA,
18-22. BOTRYOCYRTIS, 23-27. BOTRYOCAMPE, 28. CEPHALOSPYRIS.

PLATE 97.

Legion NASSELLARIA.

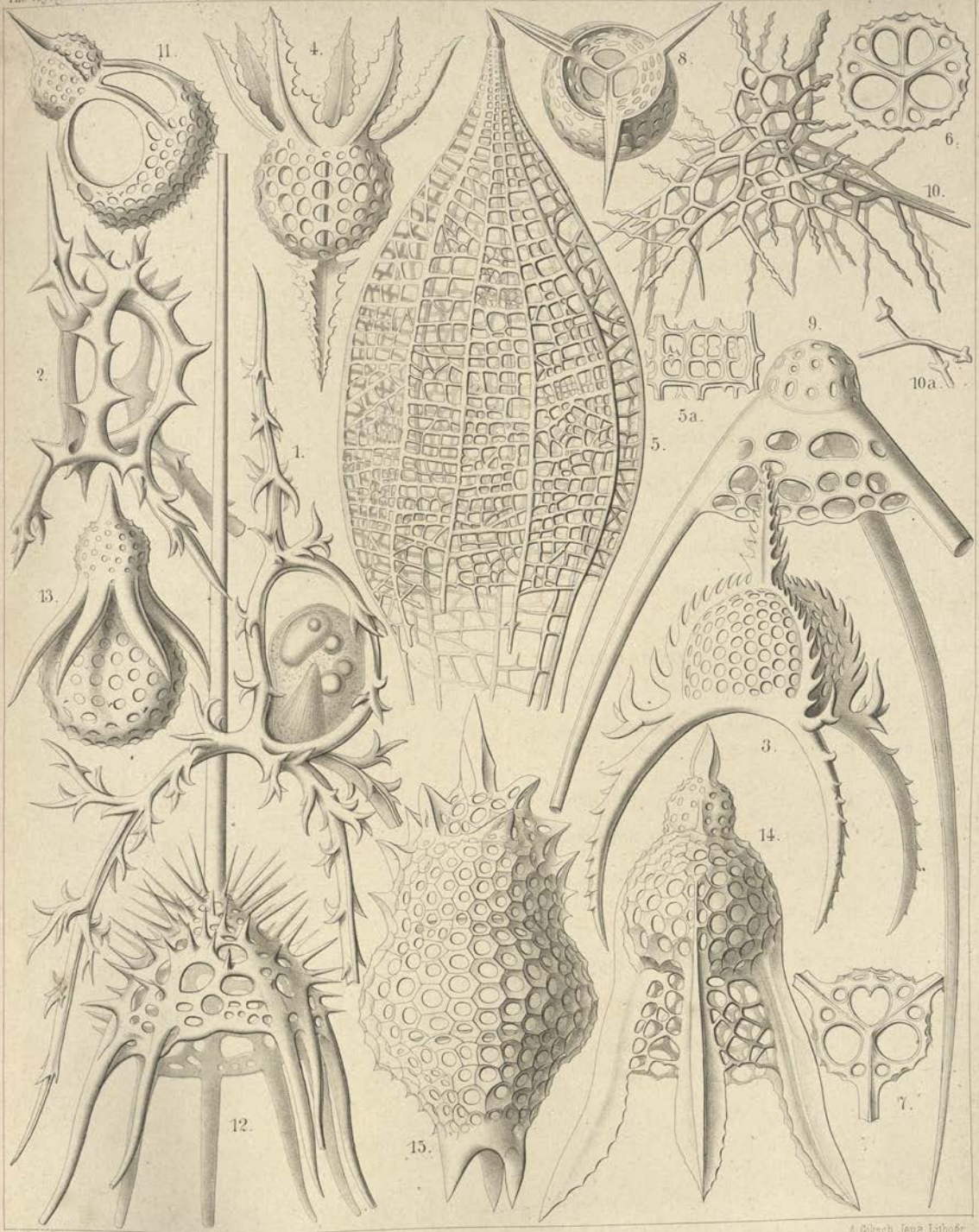
Orders STEPHOIDEA ET CYRTOIDEA.

Families STEPHANIDA, CORONIDA, TRIPOCALPIDA, PHÆNOCALPIDA, TRIPOCYRTIDA, PODOCYRTIDA et PODOCAMPIDA.

PLATE 97.

Stephanida, Coronida, Tripocalpida, Phænocalpida, Tripocyrtida, Podocyrtida et Podocampida.

		Diam.	Page
Fig. 1.	*Cortina typus*, n. sp., ...	× 300	951
	View from the right side. The upper part of the central capsule includes the nucleus, the lower part the podoconus, besides some oil-globules. The two pectoral feet are partly broken off.		
Fig. 2.	*Podocoronis cortiniscus*, n. sp., ...	× 400	981
	View from the right anterior side.		
Fig. 3.	*Tripocalpis cortinaris*, n. sp., ...	× 400	1137
Fig. 4.	*Phænocalpis petalospyris*, n. sp., ...	× 400	1173
	Lateral view (inverted).		
Fig. 5.	*Haliphormis lagena*, n. sp., ...	× 200	1167
Fig. 6.	*Halicapsa lithapium*, n. sp, ...	× 300	1190
	Basal view.		
Fig. 7.	*Peridium alatum*, n. sp., ...	× 300	1155
	Basal view.		
Fig. 8.	*Sethopilium orthopus*, n. sp., ...	× 300	1202
	Basal view.		
Fig. 9.	*Sethopilium macropus*, n. sp., ...	× 400	1203
Fig. 10.	*Amphiplecta acrostoma*, n. sp., ...	× 400	1223
Fig. 11.	*Sethopera tricostata*, n. sp., ...	× 400	1232
Fig. 12.	*Acanthocorys macroceras*, n. sp., ...	× 200	1264
Fig. 13.	*Sethophæna hexaptera*, n. sp., ...	× 400	1286
Fig. 14.	*Theopodium tricostatum*, n. sp., ...	× 400	1328
Fig. 15.	*Podocampe trictenota*, n. sp., ...	× 500	1446



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1, 2. CORTINA. 3–7. MONOCYRTIDA. 8–13. DICYRTIDA.
14. THEOPODIUM. 15. PODOCAMPE.

PLATE 98.

Legion NASSELLARIA.

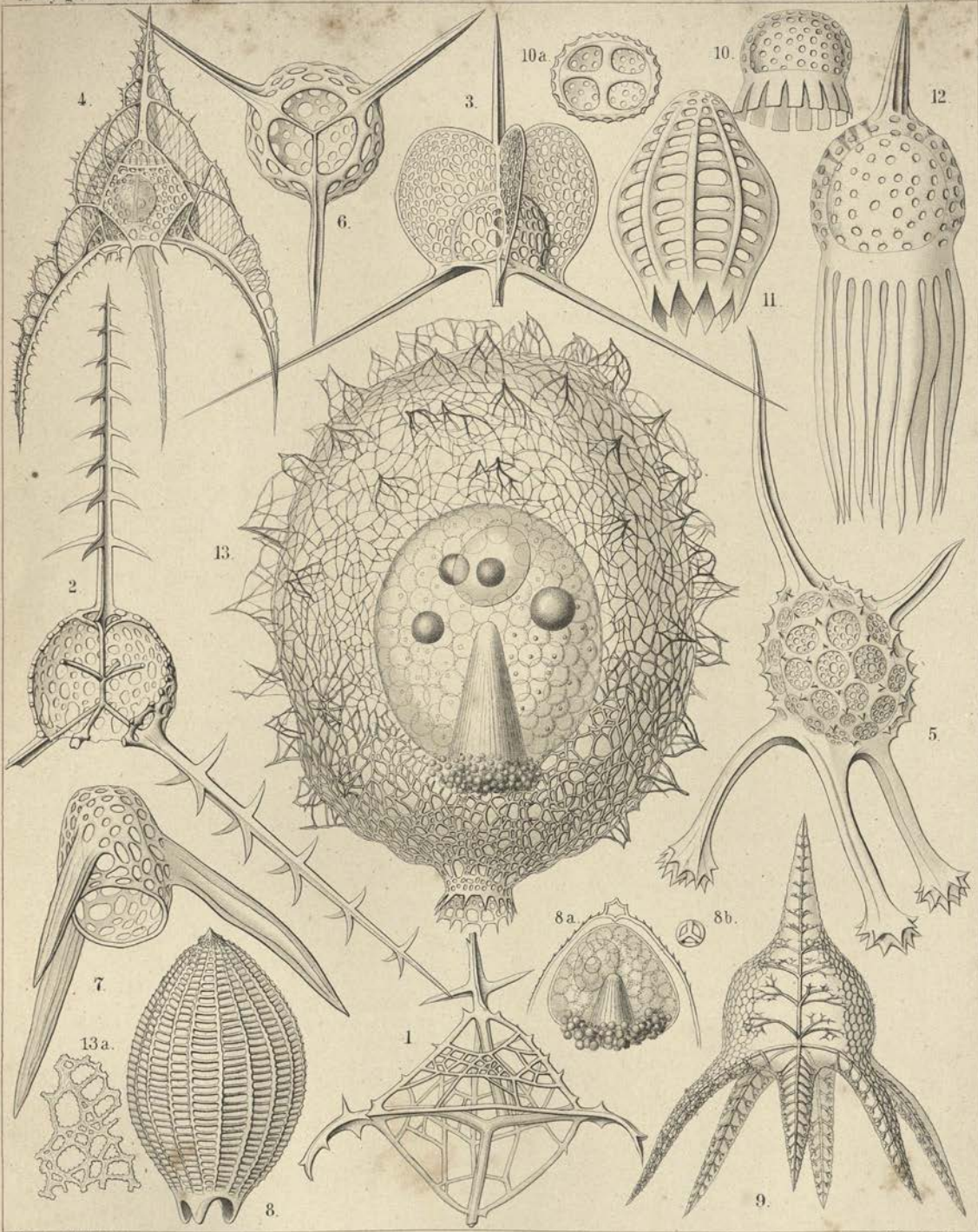
Order CYRTOIDEA.

Families TRIPOCALPIDA et PHÆNOCALPIDA.

PLATE 98.

TRIPOCALPIDA et PHÆNOCALPIDA.

		Diam.	Page
Fig. 1.	*Euscenium plectaniscus*, n. sp., ...	× 300	1146
	Half frontal, half basal view.		
Fig. 2.	*Cladoscenium pectinatum*, n. sp., ...	× 400	1150
	Shell opened by a vertical section.		
Fig. 3.	*Archiscenium cyclopterum*, n. sp., ...	× 400	1151
	View from the dorsal side.		
Fig. 4.	*Pteroscenium arcuatum*, n. sp., ...	× 400	1152
	The central capsule contains a large spherical nucleus with a nucleolus.		
Fig. 5.	*Archipera cortiniscus*, n. sp., ...	× 400	1155
Fig. 6.	*Archibursa tripodiscus*, n. sp., ...	× 400	1157
	Basal view.		
Fig. 7.	*Archipilium orthopterum*, n. sp., ...	× 400	1139
Fig. 8.	*Tripilidium costatum*, n. sp., ...	× 300	1141
	Fig. 8*a*. Central capsule in the upper part of the shell, . .	×	
	Fig. 8*b*. Cortinar septum, ...	×	
Fig. 9.	*Phænoscenium hexapodium*, n. sp., ...	× 300	1175
Fig. 10.	*Archiphæna gorgospyris*, n. sp., ...	× 300	1178
	Fig. 10*a*. Cortinar septum with four collar pores, . . .	× 300	
Fig. 11.	*Archiphormis urceolata*, n. sp., ...	× 300	1168
Fig. 12.	*Halicalyptra petalospyris*, n. sp., ...	× 400	1169
Fig. 13.	*Arachnocalpis ellipsoides*, n. sp., ...	× 300	1172
	The central capsule is filled up by clear vacuoles and exhibits in the upper half the ellipsoidal nucleus and four oil-globules, in the lower half the slender striated podoconus.		
	Fig. 13*a*. A piece of the network, more enlarged, ...	× 900	



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1-4. EUSCENIUM, 5. 6. ARCHIPERA, 7. 8. TRIPILIDIUM, 9. 10. ARCHIPHAENA,
11. 12. ARCHIPHORMIS, 13 ARACHNOCALPIS.

PLATE 99.

Legion PHÆODARIA.

Order PHÆOGROMIA.

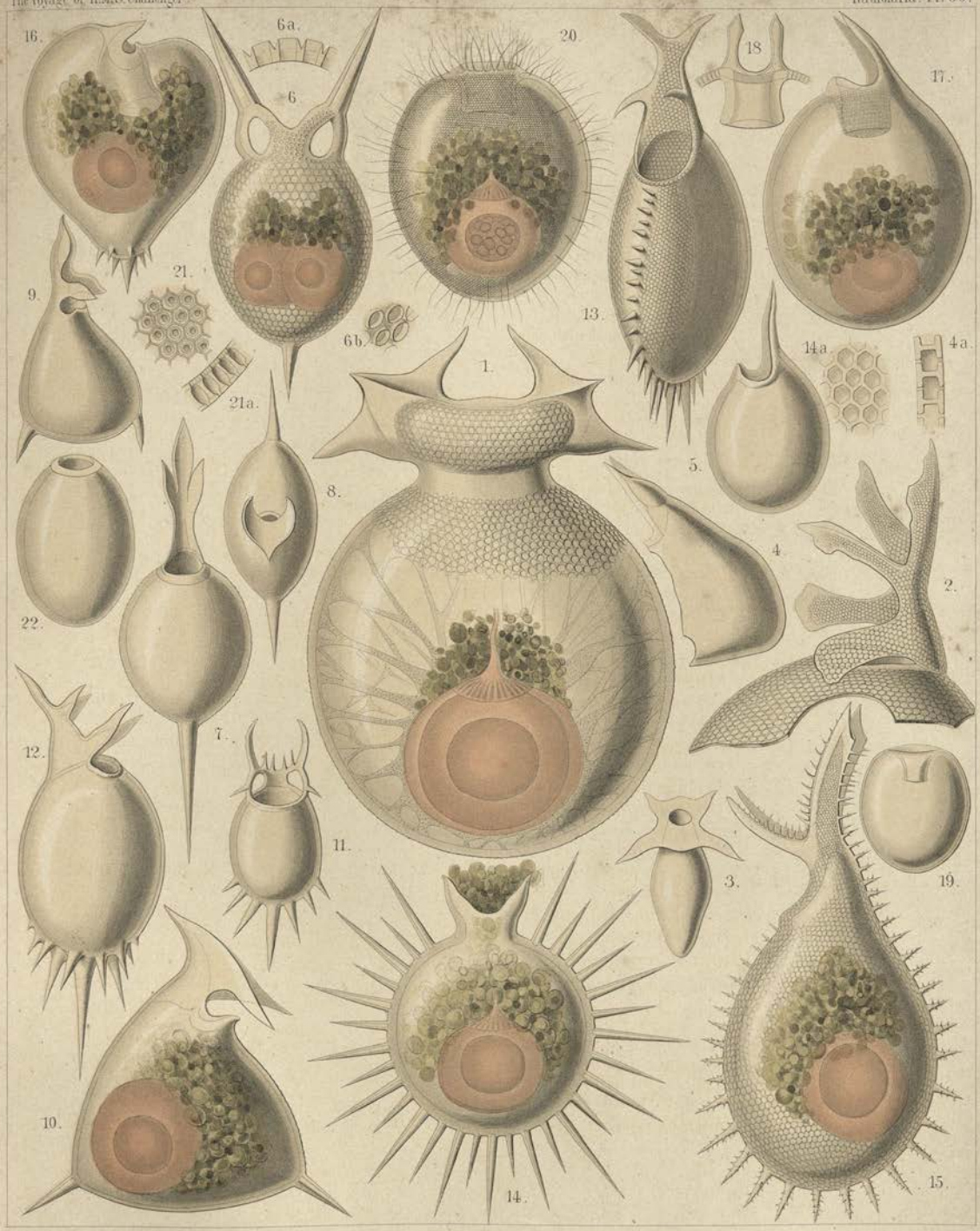
Family CHALLENGERIDA.

PLATE 99.

CHALLENGERIDA.

(The central capsule is coloured red and the phæodium green in Figs. 1, 6, 10, 14–17, 20).

		Diam.	Page
Fig. 1.	*Challengeria murrayi*, n. sp., ... From the dorsal side. Numerous streams of sarcode arise from the central capsule and pierce the calymma inside the shell.	× 50	1653
Fig. 2.	*Challengeria wildi*, n. sp., ... The peristome from the left side.	× 400	1653
Fig. 3.	*Challengeria bromleyi*, n. sp., ... From the dorsal side.	× 400	1652
Fig. 4.	*Challengeria sloggettii*, John Murray, ... The ventral corner broken off. From the left side. Fig. 4*a*. Vertical section through the shell-wall.	× 150	1649
Fig. 5.	*Challengeria tritonis*, n. sp., ...	× 150	1649
Fig. 6.	*Challengeron diodon*, n. sp., ... From the dorsal side. The shell contains two central capsules.	× 400	1654
Fig. 7.	*Challengeron pearceyi*, n. sp., ... From the dorsal side.	× 300	1654
Fig. 8.	*Challengeron richardsii*, n. sp., ... From the oral margin.	× 100	1655
Fig. 9.	*Challengeron fergusoni*, n. sp., ... From the right side.	× 100	1656
Fig. 10.	*Challengeron triangulum*, n. sp., ... From the right side.	× 200	1656
Fig. 11.	*Challengeron crosbiei*, n. sp., ... From the ventral side.	× 300	1657
Fig. 12.	*Challengeron buchanani*, n. sp., ... From the right side.	× 300	1657
Fig. 13.	*Challengeron willemoesii*, n. sp., ... From the ventral side.	× 400	1659
Fig. 14.	*Challengeron moseleyi*, n. sp., ... From the right side.	× 300	1658
Fig. 15.	*Challengeron wyvillei*, n. sp., ... From the left side.	× 300	1660
Fig. 16.	*Porcupinia cordiformis*, n. sp., ... From the right side.	× 200	1663
Fig. 17.	*Pharyngella gastræa*, n. sp., ...	× 150	1662
Fig. 18.	*Pharyngella gastrula*, n. sp., ...	× 150	1662
Fig. 19.	*Entocannula infundibulum*, n. sp., ...	× 100	1661
Fig. 20.	*Entocannula hirsuta*, n. sp., ...	× 150	1661
Fig. 21.	*Lithogromia diatomacea*, n. sp., ... A piece of the shell with diatomaceous structure. Fig. 21*a*. Vertical section through the shell-wall.	× 400	1647
Fig. 22.	*Lithogromia silicea*, n. sp., ...	× 150	1647



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1-15. CHALLENGERIA. 16-18. PHARYNGELLA. 19, 20. ENTOCANNULA.

21. 22. LITHOGROMIA.

PLATE 100.

Legion PHÆODARIA.

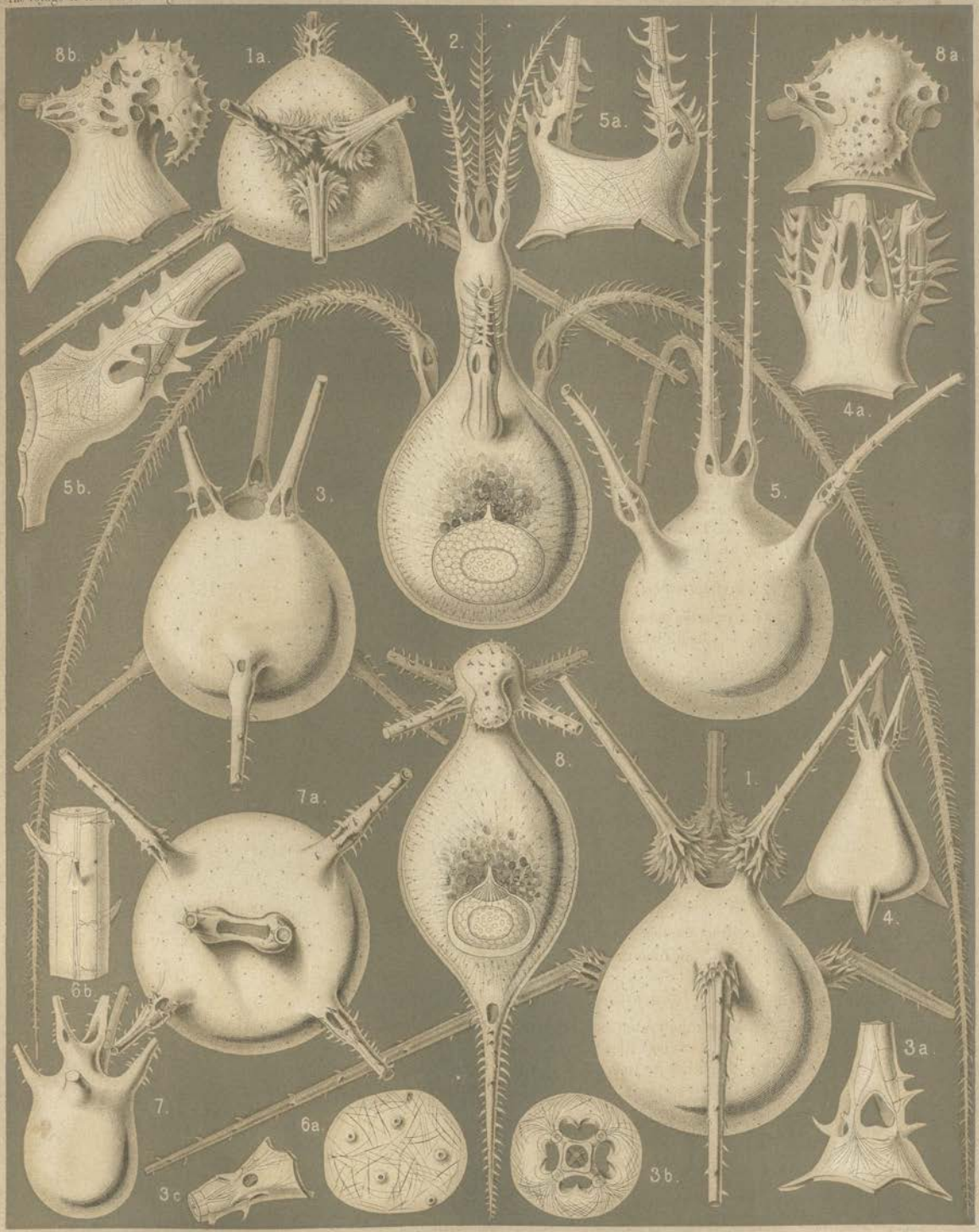
Order PHÆOGROMIA.

Family TUSCARORIDA.

PLATE 100.

TUSCARORIDA.

		Diam.	Page
Fig. 1.	*Tuscarora bisternaria*, John Murray,	× 30	1706
	View from the dorsal side.		
	Fig. 1*a*. View from the mouth pole	× 25	
Fig. 2.	*Tuscarora murrayi*, n. sp.,	× 30	1706
	View from the dorsal side. The central capsule (in the aboral half), and the phæodium (in the middle of the shell-cavity) are visible. A fine network of pseudopodia pierces the calymma, which fills up the shell-cavity.		
Fig. 3.	*Tuscarora wyvillei*, n. sp.,	× 30	1707
	View from the dorsal side.		
	Fig. 3*a*. Base of a tooth,	× 100	
	Fig. 3*b*. Transverse section through the base of a tooth.		
	Fig. 3*c*. Base of a foot.		
Fig. 4.	*Tuscarora tetrahedra*, John Murray,	× 15	1707
	View from the dorsal side.		
	Fig. 4*a*. Mouth with the three teeth,	× 50	
Fig. 5.	*Tuscarora tubulosa*, John Murray,	× 40	1707
	View from the ventral side.		
	Fig. 5*a*. Mouth with the two teeth,	× 100	
	Fig. 5*b*. Basal part of a single tooth,	× 150	
Fig. 6.	*Tuscarora porcellana*, John Murray,	× 600	1708
	Fig. 6*a*. A piece of the shell, with five pores.		
	Fig. 6*b*. A piece of a tooth, with the internal axial rod and its transverse branches.		
Fig. 7.	*Tuscarusa medusa*, n. sp.,	× 25	1709
	View from the side.		
	Fig. 7*a*. View from the mouth,	× 50	
Fig. 8.	*Tuscaridium lithornithium*, n. sp.,	× 20	1710
	View from the ventral side. Central capsule and calymma as in fig. 2.		
	Fig. 8*a*. Peristome from the ventral side.		
	Fig. 8*b*. Peristome from the right side.		



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TUSCARORA.

PLATE 101.

Legion PHÆODARIA.

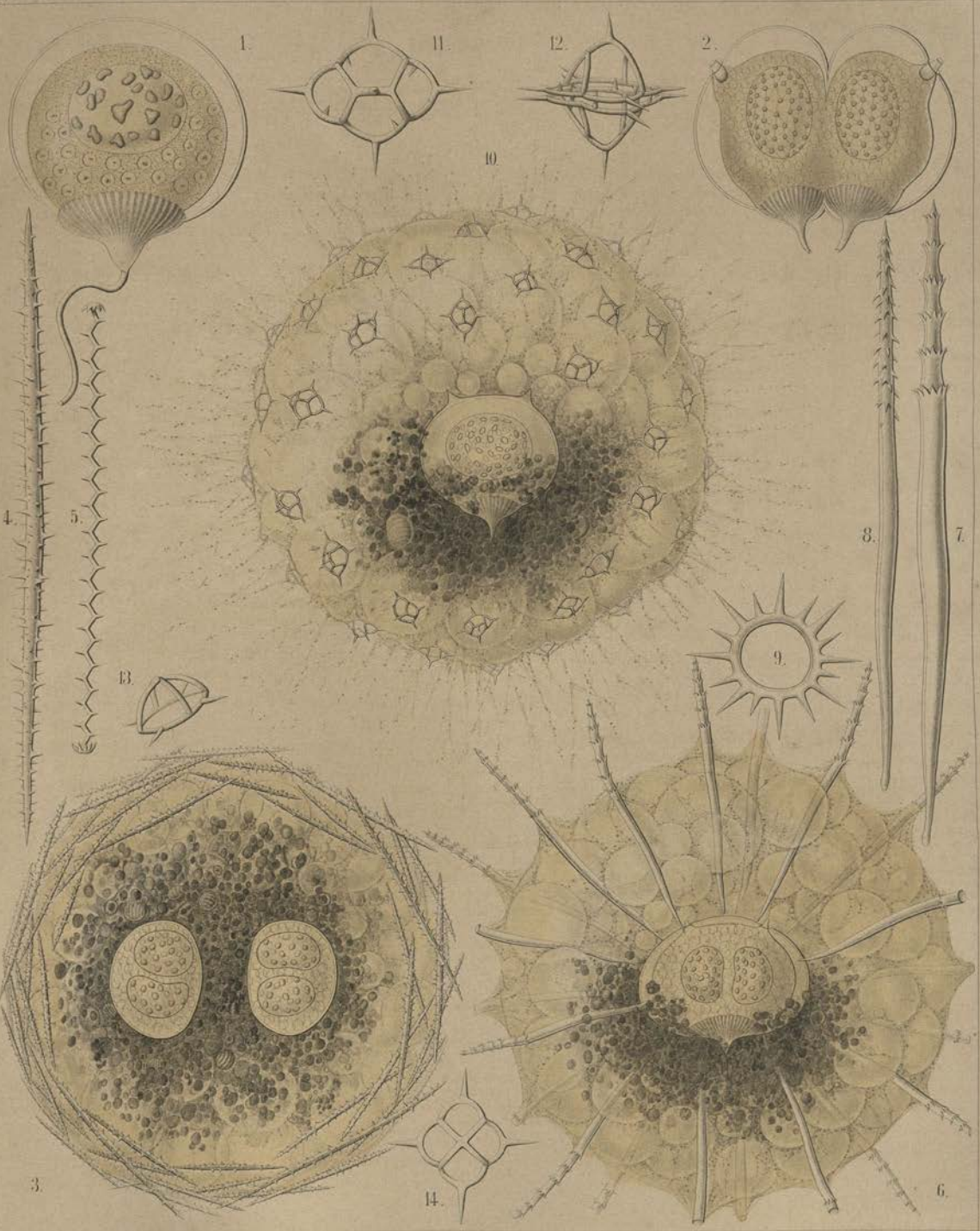
Order PHÆOCYSTINA.

Families PHÆODINIDA, CANNORRHAPHIDA et AULACANTHIDA.

PLATE 101.

PHÆODINIDA, CANNORRHAPHIDA et AULACANTHIDA.

		Diam.	Page
Fig. 1.	*Phæocolla primordialis*, n. sp., ... Central capsule, isolated. The double contoured outer membrane exhibits only one opening, with a radiate operculum and long proboscis. The granular protoplasm encloses clear spherical vacuoles. The sphæroidal nucleus contains irregular amœboid nucleoli.	× 300	1544
Fig. 2.	*Phæodina tripylea*, n. sp., ... A central capsule in self-division, with two elliptical nuclei. The astropyle is already bisected and has two proboscides.	× 300	1545
Fig. 3.	*Cannorrhaphis spinulosa*, n. sp., ... A complete specimen with two central capsules, each of which contains two nuclei. The alveolate calymma contains a dark phæodium and is surrounded by tangential tubular needles.	× 100	1552
Fig. 4.	*Cannorrhaphis spinulosa*, n. sp., ... A single tangential tube.	× 300	1552
Fig. 5.	*Cannorrhaphis spathillata*, n. sp., ... A single tangential tube.	× 300	1552
Fig. 6.	*Aulactinium actinastrum*, n. sp., ... A complete specimen, seen in optical meridional section. In the centre the spheroidal central capsule, with its double membrane and three openings (above two lateral parapylæ, below the large astropyle with its radiate operculum). The capsule encloses numerous spherical vacuoles and two hemispherical nuclei, each with numerous nucleoli. The anterior half of the capsule is surrounded by the blackish phæodium. The spherical calymma contains numerous globular alveoles and is pierced by the radial tubes, the proximal ends of which are in contact with the surface of the central capsule (compare Pl. **103**, fig. 1).	× 100	1574
Fig. 7.	*Aulactinium actinastrum*, n. sp., ... A single radial tube.	× 300	1574
Fig. 8.	*Aulactinium actinelium*, n. sp., ... A single radial tube.	× 200	1574
Fig. 9.	*Mesocena stellata*, n. sp., ... A single annular piece of the skeleton	× 600	1557
Fig. 10.	*Dictyocha stapedia*, n. sp., ... A complete specimen, observed living at Ceylon. In the centre is visible the large, spheroidal, tripylean central capsule, with its three openings, containing a large nucleus with numerous nucleoli. Its oral half is covered with the dark phæodium. The voluminous spherical calymma contains numerous globular alveoles and its surface is covered with scattered, stirrup-shaped pieces of the skeleton. Numerous free pseudopodia arise from the surface.	× 300	1561
Fig. 11.	*Dictyocha stapedia*, n. sp., ... A single piece of the skeleton, from above.	× 800	1561
Fig. 12.	*Dictyocha stapedia*, n. sp., ... A twin piece of the skeleton.	× 800	1561
Fig. 13.	*Dictyocha medusa*, n. sp., ... A single piece of the skeleton, from the side.	× 800	1560
Fig. 14.	*Dictyocha medusa*, n. sp., ... A single piece of the skeleton, from above.	× 800	1560



1–2. PHAEODINA. 3–5. CANNORRHAPHIS. 6–8. AULACTINIUM,
9. MESOCENA, 10–14. DICTYOCHA.

PLATE 102.

Legion PHÆODARIA.

Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 102.

AULACANTHIDA.

		Diam.	Page
Fig. 1.	*Auloceros elegans*, n. sp., ...	× 80	1584

A complete specimen, observed living at Ceylon. In the centre is visible the red central capsule with its three openings, containing a large nucleus of half the size, with numerous nucleoli. The alveolate calymma encloses a green excentric phæodium, is surrounded by a veil of interwoven tangential needles, and forms conical elevations, which enclose the piercing radial tubes. Between these radiate numerous pseudopodia (compare for the single parts, Pl. **103**, fig. 1 and Pl. **104**, figs. 1–3, and their explanation).

Figs. 2–6.	*Auloceros furcosus*, n. sp., ...	× 100	1583

Distal ends of different radial tubes, exhibiting the great variability of this species.

Fig. 7.	*Auloceros trigeminus* n. sp., ...	× 300	1584

Distal end of a single tube.

Fig. 8.	*Auloceros capreolus*, n. sp., ...	× 200	1584

Distal end of a single tube

Figs. 9, 10.	*Auloceros cervinus*, n. sp., ...	× 300	1584

Distal ends of two single tubes.

Fig. 12.	*Auloceros spathillaster*, n. sp., ...	× 300	1585

Distal end of a single tube.

Figs. 11, 13.	*Auloceros arborescens*, n. sp., ...	× 300	1585

Distal ends of two single tubes.

AULOCERA.

PLATE 103.

Legion PHÆODARIA.

Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 103.

AULACANTHIDA.

	Diam.	Page
Fig. 1. *Aulographis candelabrum*, n. sp., ...	× 100	1583
p, The dark phæodium surrounding the central capsule on its oral part; *a*, a part of the surrounding alveolate calymma, also surounding the central capsule; *s*, the veil of tangential needles covering the surface of the alveolate calymma; *r*, the big radial tubes, seven of which are visible, with an elegant verticil of terminal branches; *f*, the numerous pseudopodia radiating between the branches. The central capsule exhibits the following parts:—*o*, Astropyle; *u*, parapylæ; *e*, outer membrane; *i*, inner membrane; *v*, vacuoles; *n*, nucleus; *l*, nucleoli.		
Figs. 2–9. *Aulographis pandora*, n. sp., ...	× 100	1577
Distal ends of various radial tubes of a single specimen, exhibiting the extraordinary variability of this species.		
Fig. 10. *Aulographis furcula*, n. sp., ...	× 400	1580
A two-branched tube.		
Fig. 11. *Aulographis furcula*, n. sp., ...	× 400	1580
A three-branched tube.		
Figs. 12, 13. *Aulographis bovicornis*, n. sp., ...	× 200	1577
Two tubes with two branches.		
Fig. 14. *Aulographis bovicornis*, n. sp., ...	× 200	1577
A tube with three branches.		
Fig. 15. *Aulographis triangulum*, n. sp., ...	× 200	1580
A single tube.		
Fig. 16. *Aulographis taumorpha*, n. sp., ...	× 300	1577
Two tubes, each with two branches.		
Fig. 17. *Aulographis triglochin*, n. sp., ...	× 300	1578
A tube with three branches.		
Figs. 18, 19. *Aulographis hexancistra*, n. sp., ...	× 300	1581
Distal end of two tubes (one with four, the other with five terminal branches).		
Fig. 20. *Aulographis dentata*, n. sp., ...	× 200	1582
Distal end of a single tube.		
Fig. 21. *Aulographis ancorata*, n. sp., ...	× 300	1578
Two tubes, each with four recurved branches.		
Fig. 22. *Aulographis tetrancistra*, n. sp., ...	× 300	1581
A single tube.		
Fig. 23. *Aulographis stellata*, n. sp., ...	× 300	1578
a and *b*, Two rudimentary or incompletely developed tubes; *c*, a well-developed tube of the usual form.		
Fig. 24. *Aulographis asteriscus*, n. sp., ...	× 300	1581
Terminal verticil of a single tube.		
Fig. 25. *Aulographis cruciata*, n. sp., ...	× 300	1578
Distal end of a single tube.		
Fig. 26. *Aulographis pulvinata*, n. sp., ...	× 400	1582
Distal end of a single tube.		
Fig. 27. *Aulographis serrulata*, n. sp., ...	× 400	1582
Distal end of a single tube.		

AULOGRAPHIS.

PLATE 104.

Legion PHÆODARIA.

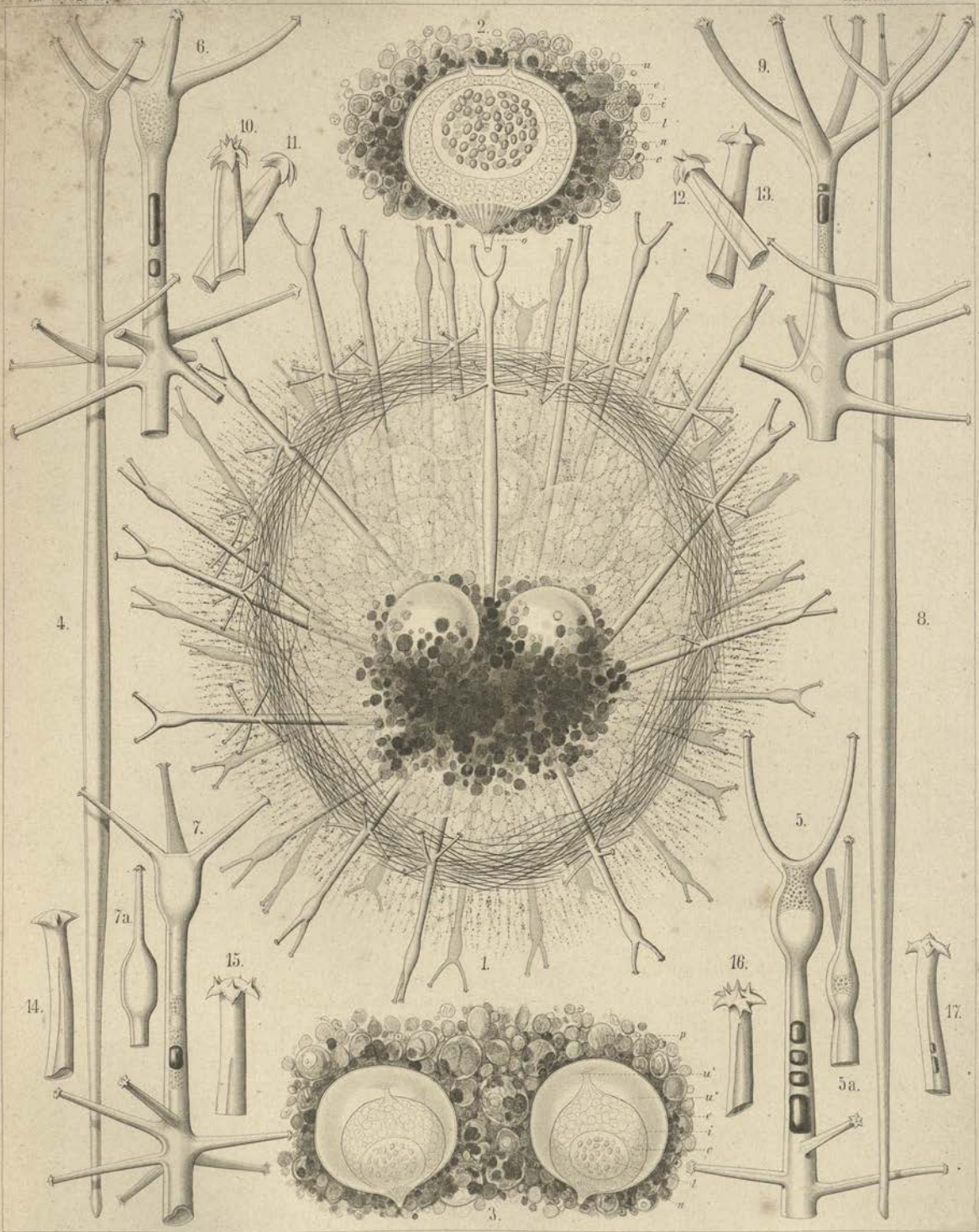
Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 104.

AULACANTHIDA.

		Diam.	Page
Fig. 1.	*Aulospathis bifurca*, n. sp., ...	× 50	1586
	A complete specimen, excellently preserved, with an ovate alveolate calymma and two central capsules. The surface of the calymma is covered with tangential needles.		
Fig. 2.	*Aulospathis bifurca*, n. sp., ...	× 100	1586
	An isolated central capsule of another specimen, surrounded by granules of the phæodium. *o*, Radiate operculum of the astropyle; *u*, the two lateral parapylæ; *e*, external membrane of the capsule; *i*, internal membrane; *c*, vacuoles in the protoplasm; *n*, nucleus; *l*, numerous nucleoli.		
Fig. 3.	*Aulospathis bifurca*, n. sp., ...	× 80	1586
	Two central capsules of another specimen, surrounded by the phæodium (Self-division). Characters as in fig. 2.		
Fig. 4.	*Aulospathis bifurca*, n. sp., ...	× 100	1586
	A single radial tube.		
Fig. 5.	*Aulospathis bifurca*, n. sp., ...	× 200	1586
	Distal part of another radial tube, partly filled up by air-bubbles.		
Fig. 6.	*Aulospathis trifurca*, n. sp., ...	× 200	1586
	Distal part of a single radial tube.		
Fig. 7.	*Aulospathis trifurca*, n. sp., ...	× 200	1586
	Distal part of another radial tube.		
Fig. 8.	*Aulospathis triodon*, n. sp., ...	× 100	1587
	A single radial tube.		
Fig. 9.	*Aulospathis tetrodon*, n. sp., ...	× 200	1588
	Distal end of a single tube.		
Figs. 10–13.	*Aulospathis polymorpha*, n. sp., . . .	× 400	1587
	Four single terminal branches with very different forms of spathillæ.		
Figs. 14–17.	*Aulospathis variabilis*, n. sp., . . .	× 400	1588
	Four single terminal branches with very different forms of spathillæ.		



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AULOSPATHIS

PLATE 105.

Legion PHÆODARIA.

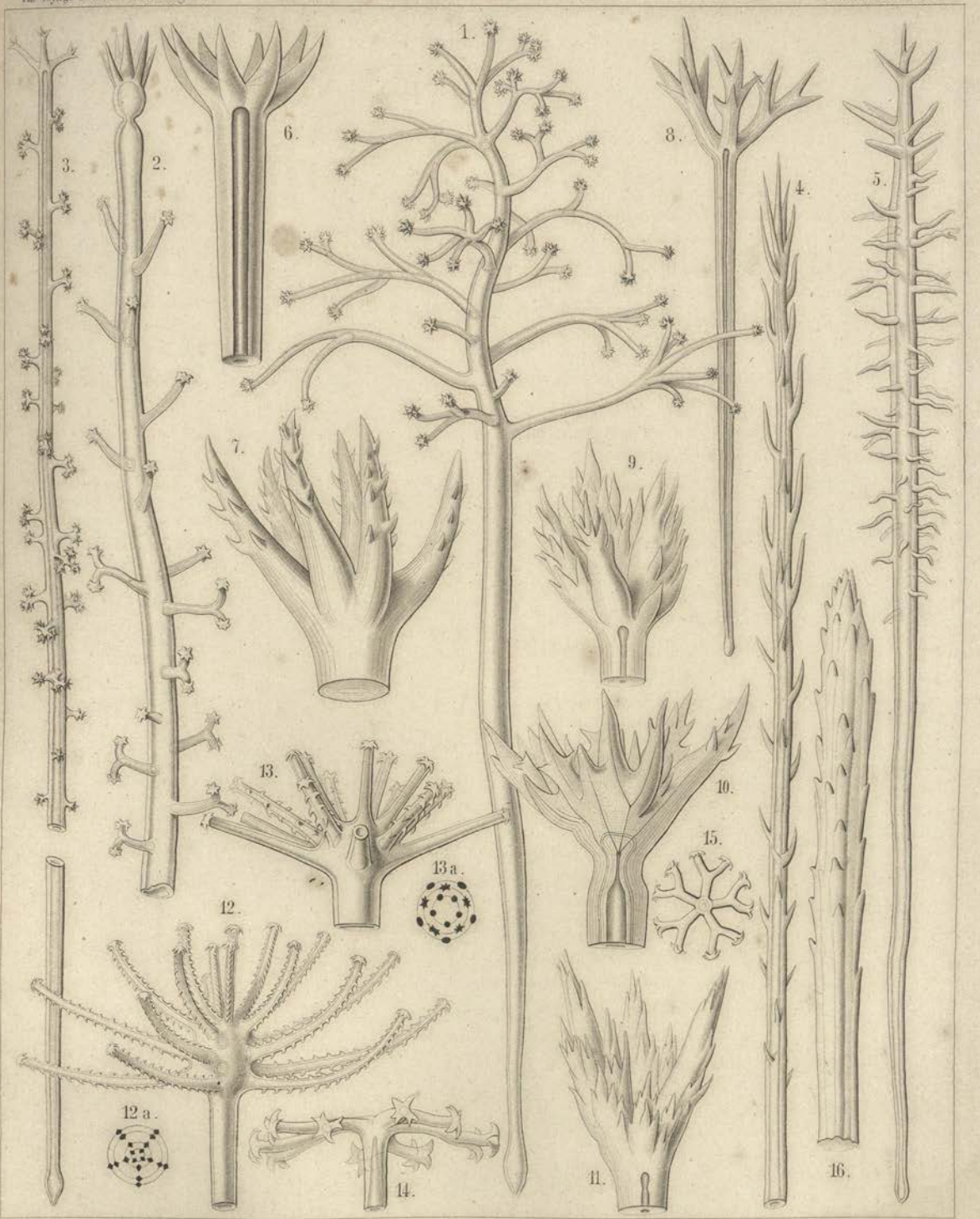
Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 105.

AULACANTHIDA.

		Diam.	Page
Fig. 1.	*Aulodendron indicum*, n. sp., A single tube.	× 200	1590
Fig. 2.	*Aulodendron pacificum*, n. sp., Distal half of a tube.	× 400	1589
Fig. 3.	*Aulodendron australe*, n. sp., A single tube.	× 300	1589
Fig. 4.	*Aulacantha spinosa*, n. sp., Distal half of a tube.	× 300	1575
Fig. 5.	*Aulodendron antarcticum*, n. sp., A single tube.	× 300	1589
Fig. 6.	*Aulographis pistillum*, n. sp., A single tube.	× 300	1579
Fig. 7.	*Aulographis martagon*, n. sp., Distal end of a single tube.	× 300	1579
Fig. 8.	*Aulographis triæna*, n. sp., A single tube.	× 80	1579
Fig. 9.	*Aulographis flammabunda*, n. sp., Distal end of a tube.	× 100	1579
Fig. 10.	*Aulographis flosculus*, n. sp., Distal end of a tube.	× 300	1580
Fig. 11.	*Aulographis gemmasceus*, n. sp., Distal end of a tube.	× 100	1580
Fig. 12.	*Aulographis verticillata*, n. sp., Distal end of a tube. Fig. 12*a*. Apical view, with four verticils of five branches.	× 400	1582
Fig. 13.	*Aulographis tripentas*, n. sp., Distal end of a tube. Fig. 13*a*. Apical view, with three verticils of five branches.	× 300	1582
Fig. 14.	*Auloceros dicranaster*, n. sp., Distal end of a tube, seen from the side.	× 400	1585
Fig. 15.	*Auloceros dicranaster*, n. sp., Distal end of a tube, seen from the terminal face.	× 200	1585
Fig. 16.	*Aulacantha cannulata*, n. sp., Distal end of a tube.	× 300	1576



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1-5. AULODENDRON. 6-15. AULOGRAPHIS. 16. AULACANTHA.

PLATE 106.

Legion PHÆODARIA.

Order PHÆOSPHÆRIA.

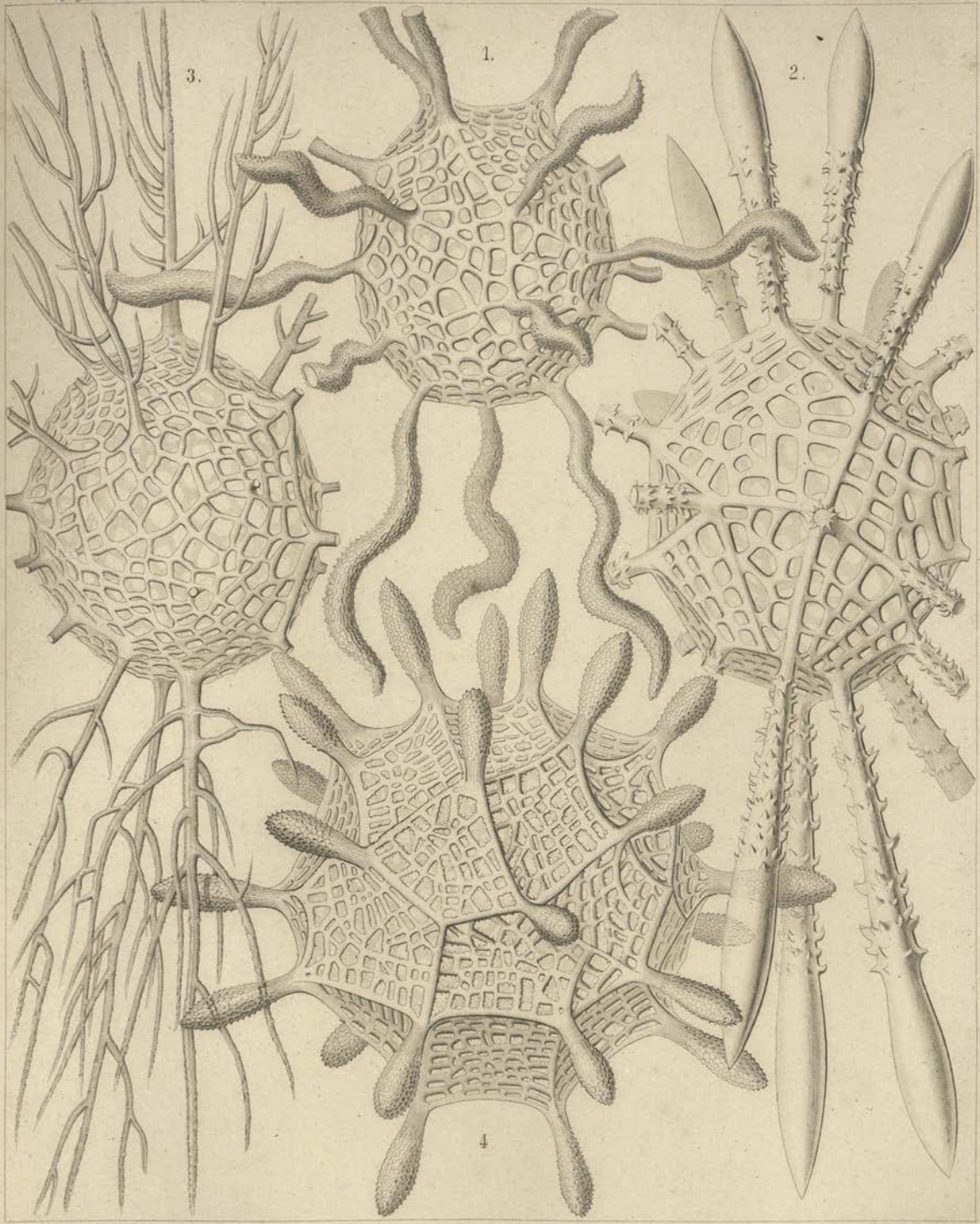
Family OROSPHÆRIDA.

PLATE 106.

OROSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Orosphæra serpentina*, n. sp., ... ×	50	1595
	The entire shell.		
Fig. 2.	*Orosphæra horrida*, n. sp., ... ×	50	1596
	The entire shell.		
Fig. 3.	*Orosphæra arborescens*, n. sp. (vel *Orothamnus arborescens*), ×	50	1597
	The entire shell.		
Fig. 4.	*Oroscena gegenbauri*, n. sp., ... ×	50	1597
	The entire shell.		

(Compare Pl. 12, fig. 1.)



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1. 2. ORONIA, 3. OROTHAMNUS, 4. OROSCENA.

PLATE 107.

Legion PHÆODARIA.

Order PHÆOSPHÆRIA.

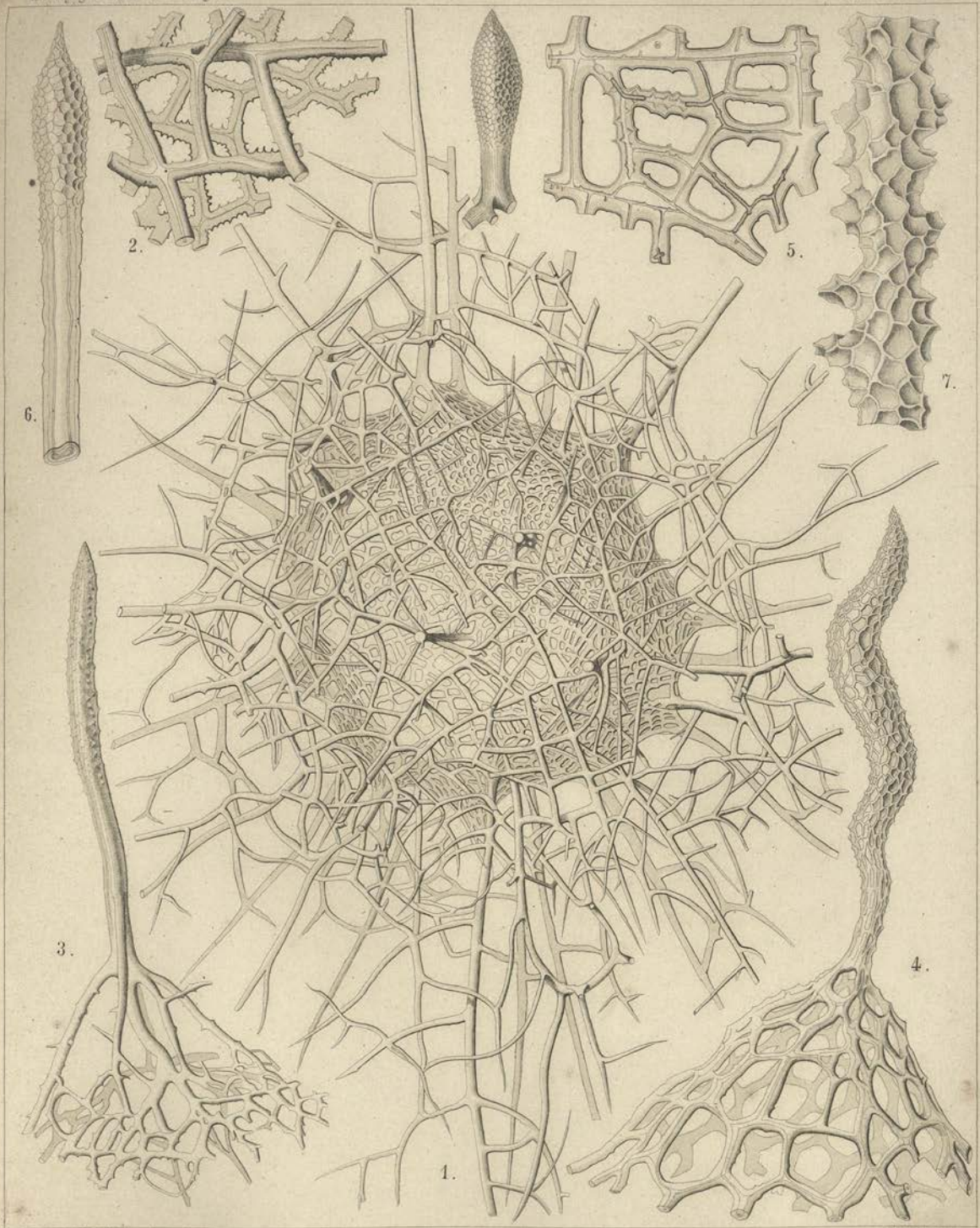
Family OROSPHÆRIDA.

PLATE 107.

OROSPHÆRIDA.

(Fig. 8 of this Plate has no number, by mistake; it is at the top in the middle.)

		Diam.	Page
Fig. 1.	*Oroplegma diplosphæra*, n. sp., ...	× 50	1600
	The entire shell, enveloped by an outer mantle of spongy framework.		
Fig. 2.	*Oroplegma giganteum*, n. sp., ...	× 200	1601
	A small piece of the spongy framework.		
Fig. 3.	*Oroplegma spongiosum*, n. sp., ...	× 50	1601
	A pyramidal elevation of the inner shell, with its spongy framework, and a radial spine on the top.		
Fig. 4.	*Oroscena bærii*, n. sp., ...	× 100	1598
	A pyramidal elevation of the shell, with a radial spine on its top.		
Fig. 5.	*Orona maxima*, n. sp., ...	× 300	1594
	A small piece of the network; the central canals of the bars are partly filled by air.		
Fig. 6.	*Oroscena cuvieri*, n. sp., ...	× 50	1598
	A single radial spine.		
Fig. 7.	*Orona crassissima*, n. sp., ...	× 300	1594
	A single bar of the coarse network, with dimpled surface.		
Fig. 8.	*Oroscena mülleri*, n. sp., ...	× 50	1598
	A single radial spine.		



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1-3. OROPLEGMA, 4-7. OROSCENA.

PLATE 108.

Legion PHÆODARIA.

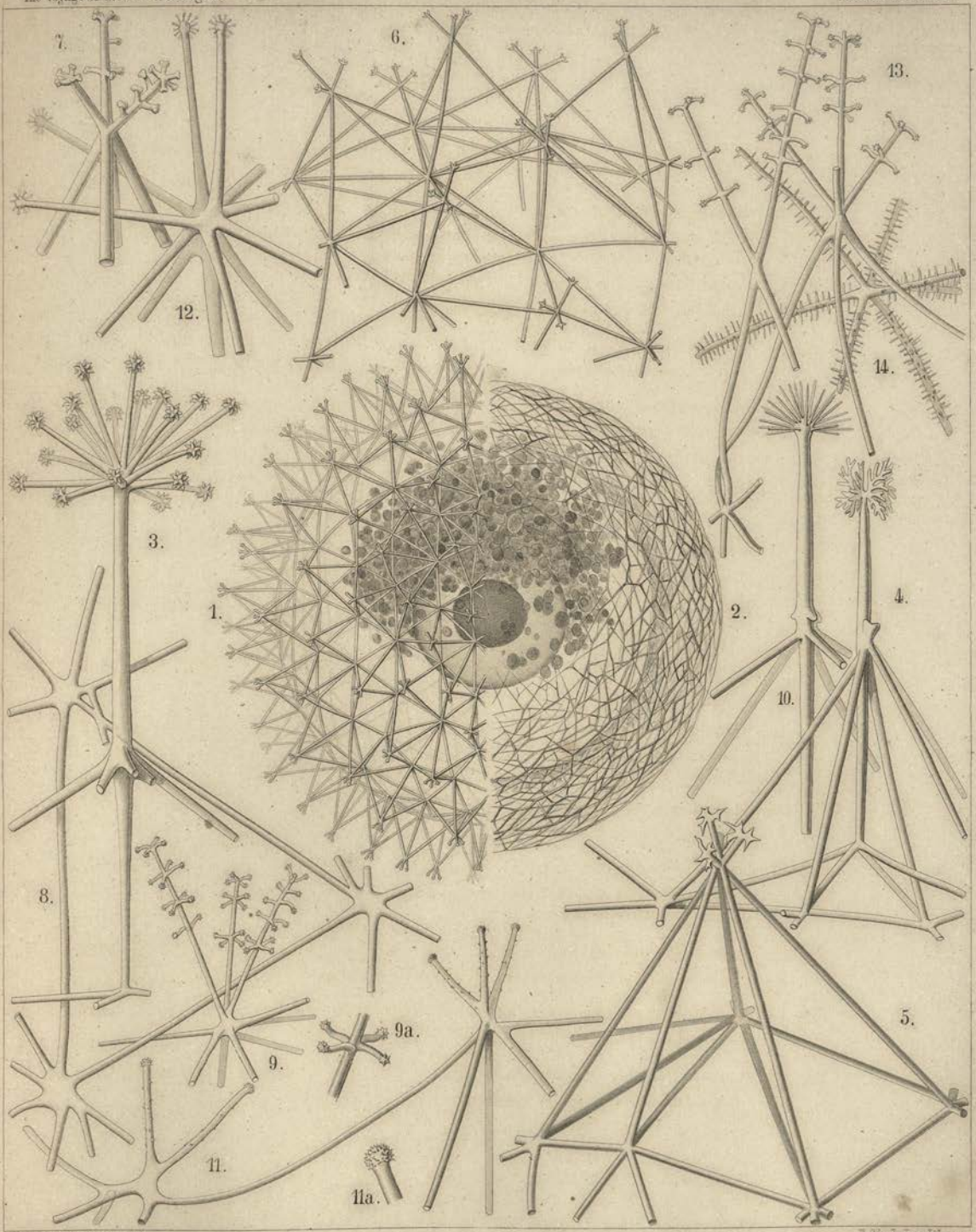
Order PHÆOSPHÆRIA.

Family SAGOSPHÆRIDA.

PLATE 108.

SAGOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Sagoscena castra*, n. sp., ... Half the shell, with the enclosed central capsule and the phæodium, stained by carmine. (The central nucleus dark.)	× 50	1608
Fig. 2.	*Sagmarium spongodictyum*, n. sp., ... Half the shell, with its delicate spongy framework.	× 50	1612
Fig. 3.	*Sagenoscena stellata*, n. sp., ... Top and axial rod of a pyramid, prolonged into a crowned radial spine.	× 300	1610
Fig. 4.	*Sagenoscena ornata*, n. sp., ... A single pyramid with its axial rod, prolonged into a crowned radial spine.	× 300	1610
Fig. 5.	*Sagoscena pellorium*, n. sp., ... A single pyramid of the shell-surface.	× 300	1609
Fig. 6.	*Sagoscena tentorium*, n. sp., ... A piece of the shell with eight pyramids.	× 100	1608
Fig. 7.	*Sagoscena prætorium*, n. sp., ... Top of a pyramid.	× 400	1609
Fig. 8.	*Sagena ternaria*, n. sp., ... A single triangular mesh of the lattice sphere.	× 400	1606
Fig. 9.	*Sagmidium crucicorne*, n. sp., ... A single nodal point with three radial spines. Fig. 9*a*. A portion of a spine, more highly magnified.	× 400	1613
Fig. 10.	*Sagosphæra penicilla*, n. sp., ... One nodal point and its radial spine.	× 400	1607
Fig. 11.	*Sagosphæra furcilla*, n. sp., ... Two nodal points of the network. Fig. 11*a*. Extremity of a spine.	× 300	1607
Fig. 12.	*Sagmidium quadricorne*, n. sp., ... A nodal point of the shell surface, with four divergent spines.	× 400	1614
Fig. 13.	*Sagoplegma scenophora*, n. sp., ... Tops of two pyramids.	× 300	1615
Fig. 14.	*Sagmarium plegmosphærium*, n. sp., ... A nodal point of the spongy framework.	× 300	1612



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1-7. SAGOSCENA, 8. SAGENA, 9-14. SAGOSPHAERA.

PLATE 109.

Legion PHÆODARIA.

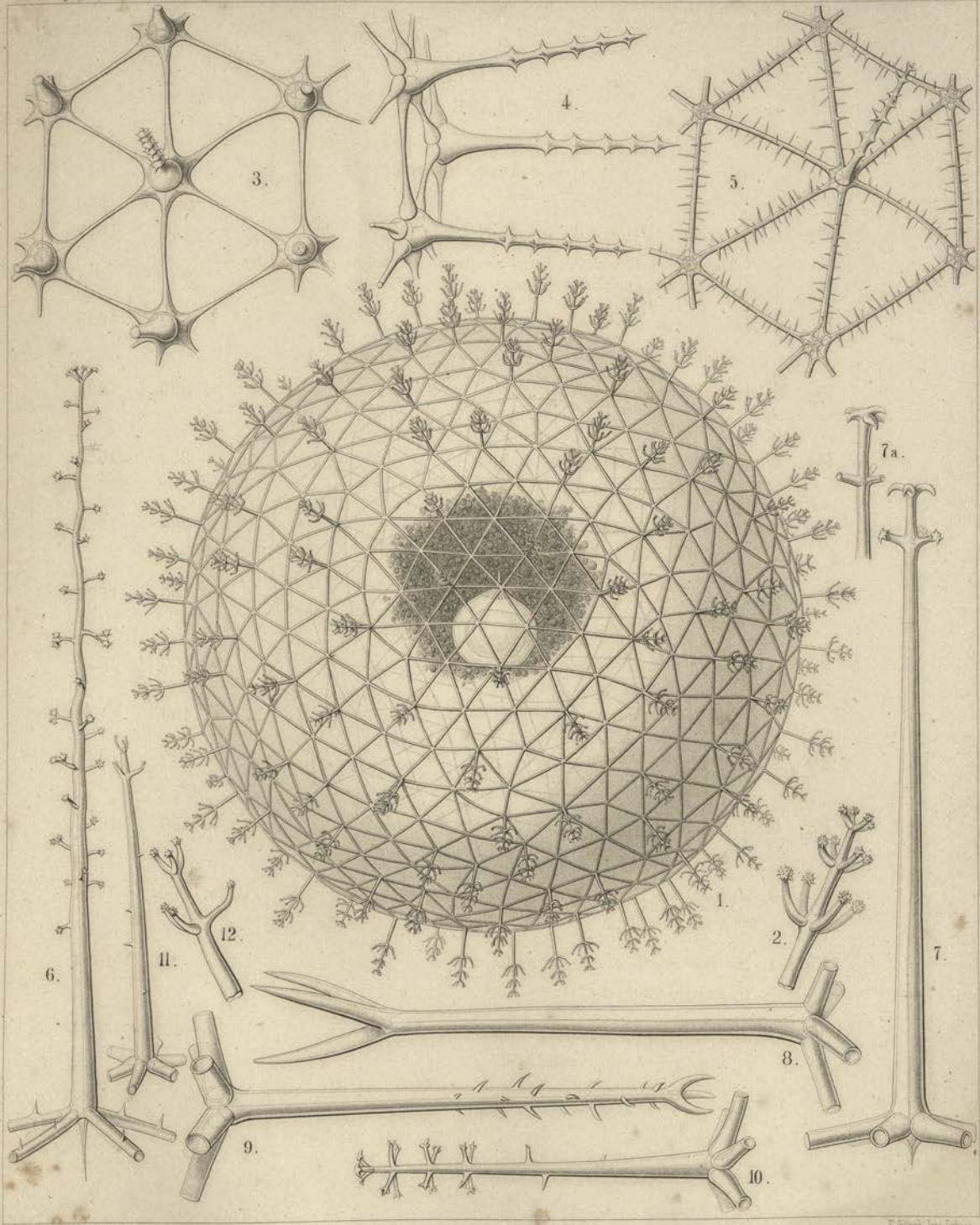
Order PHÆOSPHÆRIA.

Family AULOSPHÆRIDA.

PLATE 109.

AULOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Aulosphæra dendrophora*, n. sp., ...	× 50	1625
	The entire shell, with the central capsule and its nucleus, enveloped by the dark granular phæodium.		
Fig. 2.	*Aulosphæra dendrophora*, n. sp., ...	× 300	1625
	A single radial tube.		
Fig. 3.	*Aulosphæra sceptrophora*, n. sp., ...	× 300	1625
	A hexagonal group of six triangular meshes.		
Fig. 4.	*Aulosphæra sceptrophora*, n. sp., ...	× 300	1625
	A similar group, seen from the side, with three radial tubes.		
Fig. 5.	*Aulosphæra spinosa*, n. sp., ...	× 300	1627
	A hexagonal group of six triangular meshes.		
Fig. 6.	*Aulosphæra undulata*, n. sp., ...	× 400	1627
	A single radial tube.		
Fig. 7.	*Aulosphæra spathillata*, n. sp., ...	× 400	1624
	A single radial tube.		
	Fig. 7*a*. An abnormal variety, ...	× 400	
Fig. 8.	*Aulosphæra triodon*, n. sp., ...	× 400	1623
	A single radial tube.		
Fig. 9.	*Aulosphæra trifurca*, n. sp., ...	× 400	1626
	A single radial tube.		
Fig. 10.	*Aulosphæra cruciata*, n. sp., ...	× 300	1624
	A single radial tube.		
Fig. 11.	*Aulosphæra bisternaria*, n. sp., ...	× 300	1624
	A single radial tube.		
Fig. 12.	*Aulosphæra bisternaria*, n. sp., ...	× 600	1624
	Distal end of a single radial tube.		



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AULOSPHAERA.

PLATE 110.

Legion PHÆODARIA.

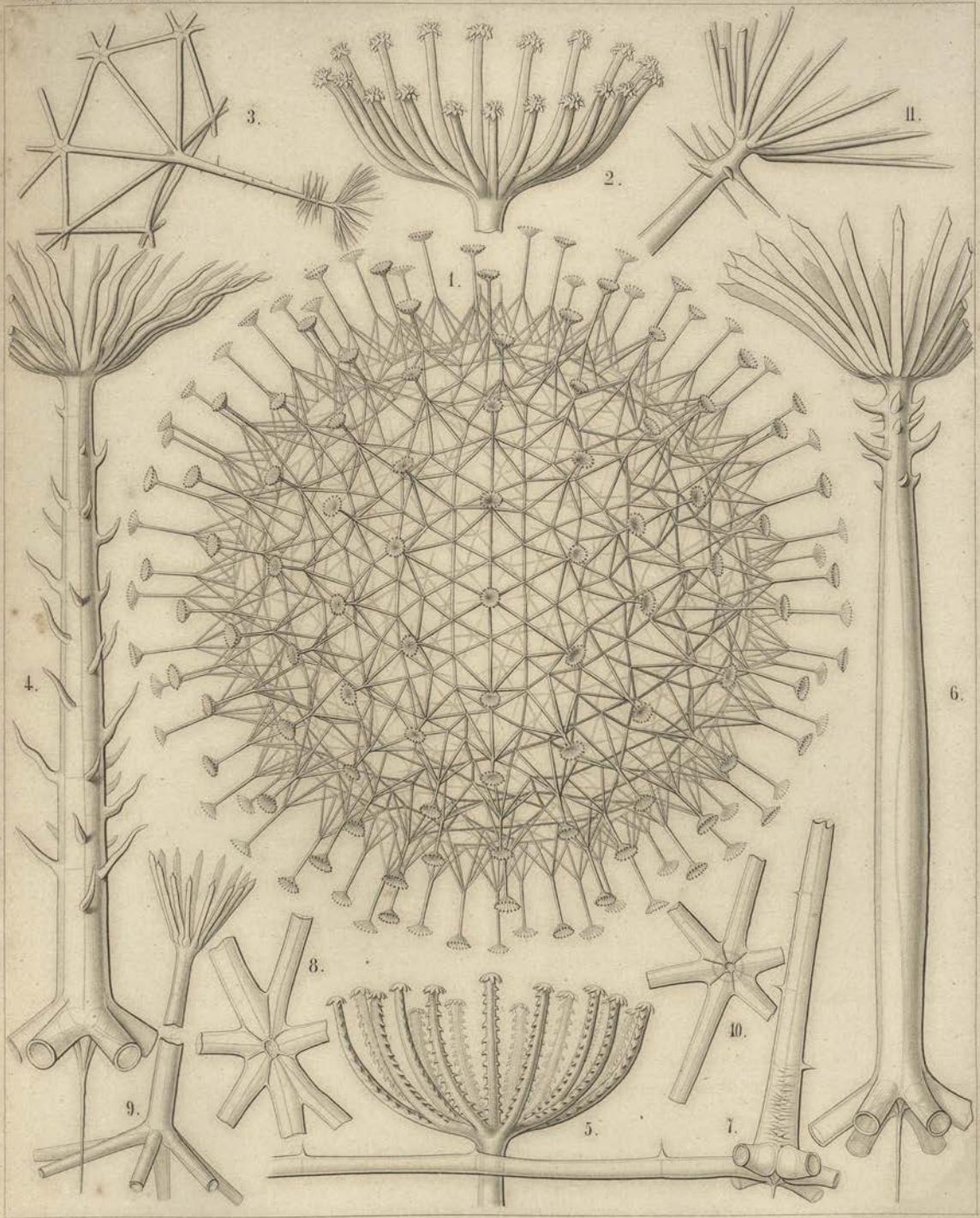
Order PHÆOSPHÆRIA.

Family AULOSPHÆRIDA.

PLATE 110.

AULOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Auloscena mirabilis*, n. sp., ...	× 50	1628
	The complete shell, representing a regular latticed sphere, which is composed of equal hexagonal pyramids; the top of each pyramid bears a radial tube with a terminal corona.		
Fig. 2.	*Auloscena mirabilis*, n. sp., ...	× 600	1628
	Terminal corona of a single radial tube.		
Fig. 3.	*Auloscena penicillus*, n. sp., ...	× 200	1629
	A single tent-shaped elevation or six-sided pyramid, bearing on the top a brush-shaped radial tube.		
Fig. 4.	*Auloscena flammabunda*, n. sp., ...	× 400	1629
	A single radial tube, with a centripetal free prolongation at the base and a verticil of undulate terminal branches at the distal end.		
Fig. 5.	*Auloscena serrata*, n. sp., ...	× 600	1630
	Terminal corona of a single radial tube.		
Fig. 6.	*Auloscena tentorium*, n. sp., ...	× 400	1628
	A single radial tube, with a centripetal prolongation at the base and a terminal corona at the distal end.		
Fig. 7.	*Auloscena gigantea*, n. sp., ...	× 400	1629
	Basal part of a radial tube, exhibiting the internal axial thread and its connection with the six tubes, which form the edges of a flat six-sided pyramid (usually more elevated than the figure exhibits).		
Fig. 8.	*Auloscena spectabilis*, n. sp., ...	× 400	1628
	Apex of an abnormal pyramid (sometimes occurring), in which seven radial tubes are united, instead of six.		
Fig. 9.	*Auloscena spectabilis*, n. sp., ...	× 800	1628
	Basal part of a radial tube, in the top of a flat six-sided pyramid; above it the distal part of the same tube with its terminal corona (middle part of the tube wanting).		
Fig. 10.	*Auloscena verticillus*, n. sp., ...	× 300	1629
	Apex of a six-sided pyramid, seen from the inside.		
Fig. 11.	*Auloscena verticillus*, n. sp., ...	× 400	1629
	Distal part of a single radial tube, with the terminal corona.		



AULOSCENA.

PLATE 111.

Legion PHÆODARIA.

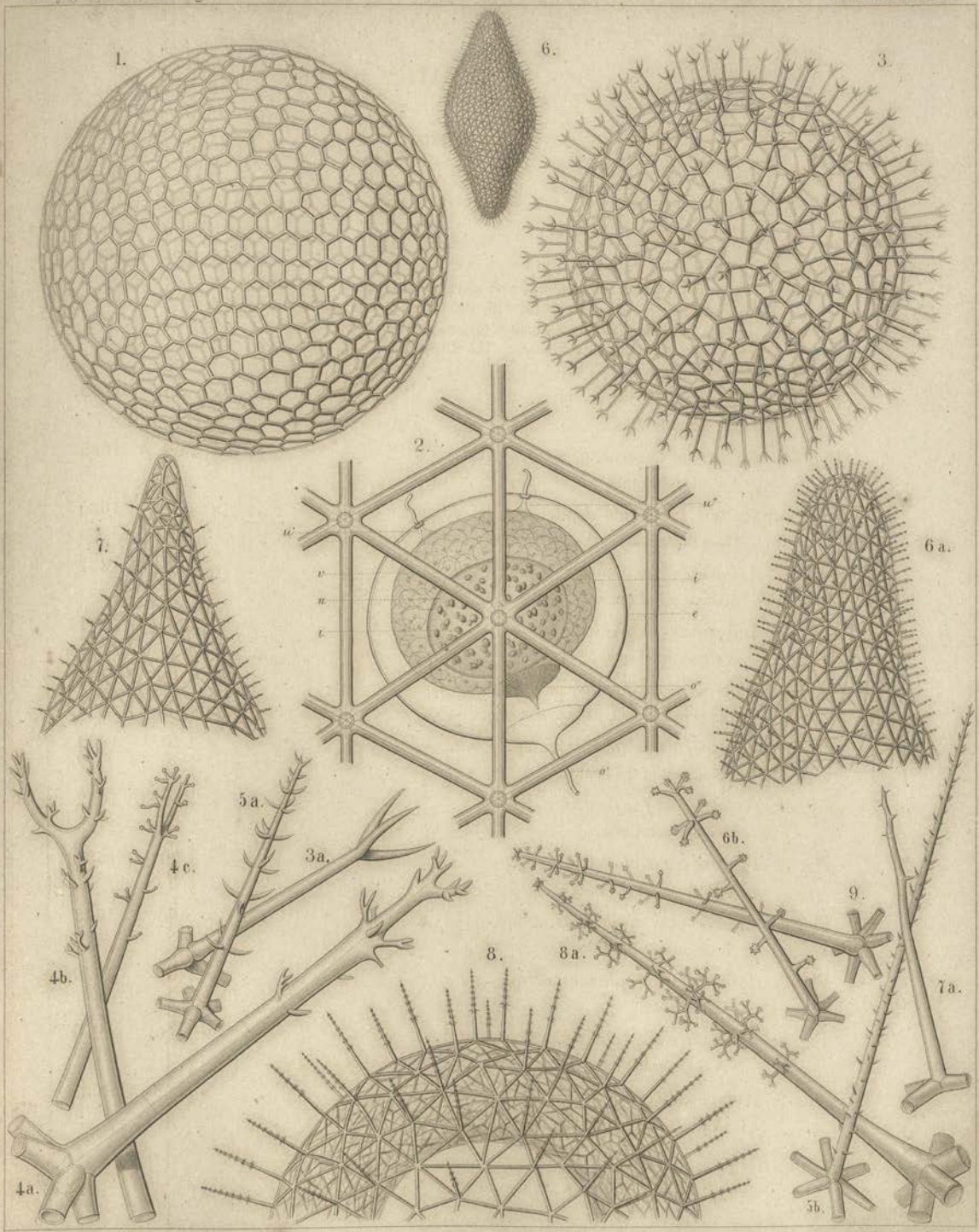
Order PHÆOSPHÆRIA.

Family AULOSPHÆRIDA.

PLATE 111.

AULOSPHÆRIDA.

	Diam.	Page
Fig. 1. *Aulonia hexagonia*, n. sp., ... The complete spherical shell.	× 30	1634
Fig. 2. *Aularia ternaria*, n. sp., ... A group of six triangular meshes, with seven nodal points of radial tubes. Behind the central capsule, with its double membrane (*e*, outer; *i*, inner) and radiate operculum (*o*); *u*, the two outer parapylæ; *v*, vacuoles in the protoplasm. The ellipsoidal nucleus (*n*) contains numerous nucleoli (*l*).	× 300	1621
Fig. 3. *Aulastrum triceros*, n. sp., ... The complete shell.	× 50	1635
Fig. 3*a*. *Aulastrum triceros*, n. sp., ... A single radial tube.	× 300	1635
Figs. 4*a*, 4*b*, 4*c*. *Aulastrum dendroceros*, n. sp., . . . Three single radial spines (taken from three different specimens).	× 400	1635
Fig. 5*a*. *Aulophacus lenticularis*, n. sp., ... A single radial spine.	× 300	1631
Fig. 5*b*. *Aulophacus amphidiscus*, n. sp., ... A single radial spine.	× 300	1631
Fig. 6. *Aulatractus fusiformis*, n. sp., ... The complete shell, five times enlarged.	× 5	1632
Fig. 6*a*. *Aulatractus fusiformis*, n. sp., ... Apical part of the shell.	× 20	1632
Fig. 6*b*. *Aulatractus fusiformis*, n. sp., ... A single radial tube.	× 400	1632
Fig. 7. *Aulatractus diploconus*, n. sp., ... Apical part of the shell.	× 20	1632
Fig. 7*a*. *Aulatractus diploconus*, n. sp., ... A single radial tube.	× 400	1632
Fig. 8. *Auloplegma perplexum*, n. sp., ... Half the shell.	× 50	1630
Fig. 8*a*. *Auloplegma perplexum*, n. sp., ... A single radial tube.	× 400	1630
Fig. 9. *Auloplegma spongiosum*, n. sp., ... A single radial tube.	× 300	1631



E. Haeckel and A. Giltsch Del.

E. Giltsch, Jena, Lithogr.

1. AULONIA, 2–5. AULOSPHAERA, 6. 7. AULATRACTUS,
8. AULOPLEGMA.

PLATE 112.

Legion PHÆODARIA.

Order PHÆOSPHÆRIA.

Family CANNOSPHÆRIDA.

PLATE 112.

CANNOSPHÆRIDA.

		Diam.	Page
Fig. 1.	*Cannosphæra antarctica*, n. sp., ...	× 50	1640

The entire shell. The inner mammillate shell, from the mouth of which is prominent the phæodium, is connected by numerous radial beams with the outer shell.

Fig. 2.	*Cannosphæra antarctica*, n. sp., ...	× 200	1640

The inner shell, from the mouth of which is prominent the phæodium, and a single hexagonal mesh of the outer shell, connected with the former by thin radial threads.

Fig. 3.	*Cannosphæra antarctica*, n. sp., ...	× 200	1640

A single radial spine, with four terminal branches.

Fig. 4.	*Cannosphæra pacifica*, n. sp., ...	× 200	1641

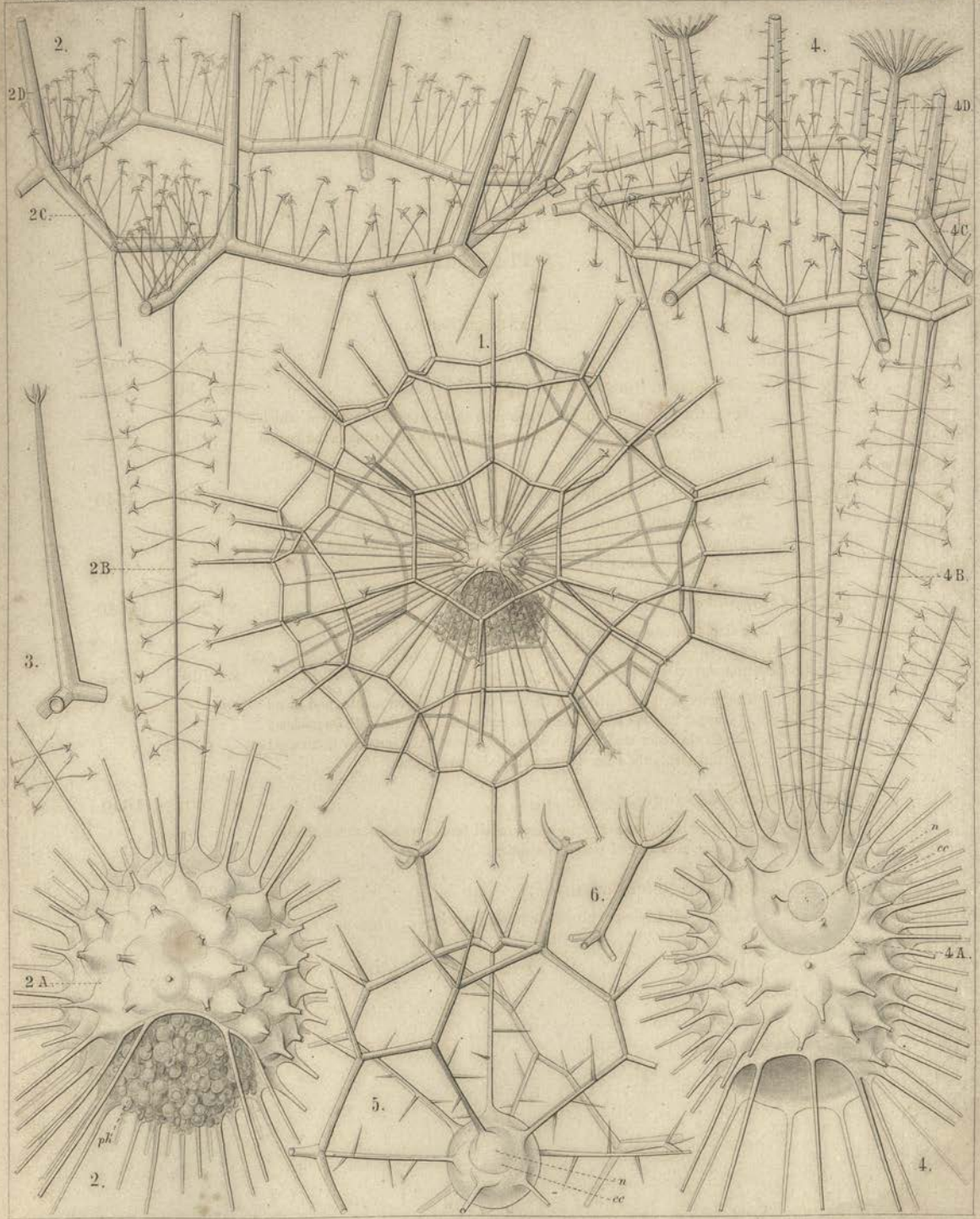
The inner shell, exhibiting on its base the widely open mouth, and in its upper half the transparent spherical central capsule with its nucleus. Of the outer shell (which is connected with the inner by thin radial threads), only a few polygonal meshes are visible.

Fig. 5.	*Cannosphæra atlantica*, n. sp., ...	× 200	1640

The inner shell, connected by spiny radial beams with the outer shell, a quadrant only of which is visible.

Fig. 6.	*Cannosphæra atlantica*, n. sp., ...	× 200	1640

A single radial spine, with five terminal branches.



Fitzpatrick and Affleck Del. Fitzpatrick Jons. Lithogr.

CANNOSPHAERA.

PLATE 113.

Legion PHÆODARIA.

Order PHÆOGROMIA.

Family CASTANELLIDA.

PLATE 113.

CASTANELLIDA.

	Diam.	Page
Fig. 1. *Castanissa challengeri*, n. sp., ...	× 100	1686
In the lower part of the figure is visible the large corona of teeth around the mouth (*a*).		
Fig. 2. *Castanidium moseleyi*, n. sp., ...	× 80	1686
In the upper part of the figure, at left, is visible the irregular polygonal mouth (*a*).		
Fig. 3. *Castanopsis naresi*, n. sp., ...	× 80	1688
In the upper part of the figure is visible the smooth circular mouth (*a*).		
Fig. 4. *Castanura tizardi*, n. sp., ...	× 80	1689
Fig. 4*a*. A single main-spine of the same, . . .	× 400	
Fig. 5. *Castanidium murrayi*, n. sp., ...	× 100	1685
With a large phæodium, partly protruded through the circular mouth.		
Fig. 5*a*. A single main-spine of the same, hexagonally dimpled, .	× 400	
Fig. 6. *Castanella wyvillei*, n. sp., ...	× 100	1683
A piece of the shell with the mouth, armed with six large teeth (*a*).		
Fig. 7. *Castanidium buchanani*, n. sp., ...	× 100	1685
A piece of the shell with the smooth roundish mouth (*a*).		

F. Haeckel and A. Gilruth, Del. H. Gilruth, Imp. Lithogr.

CASTANELLA.

PLATE 114.

Legion PHÆODARIA.

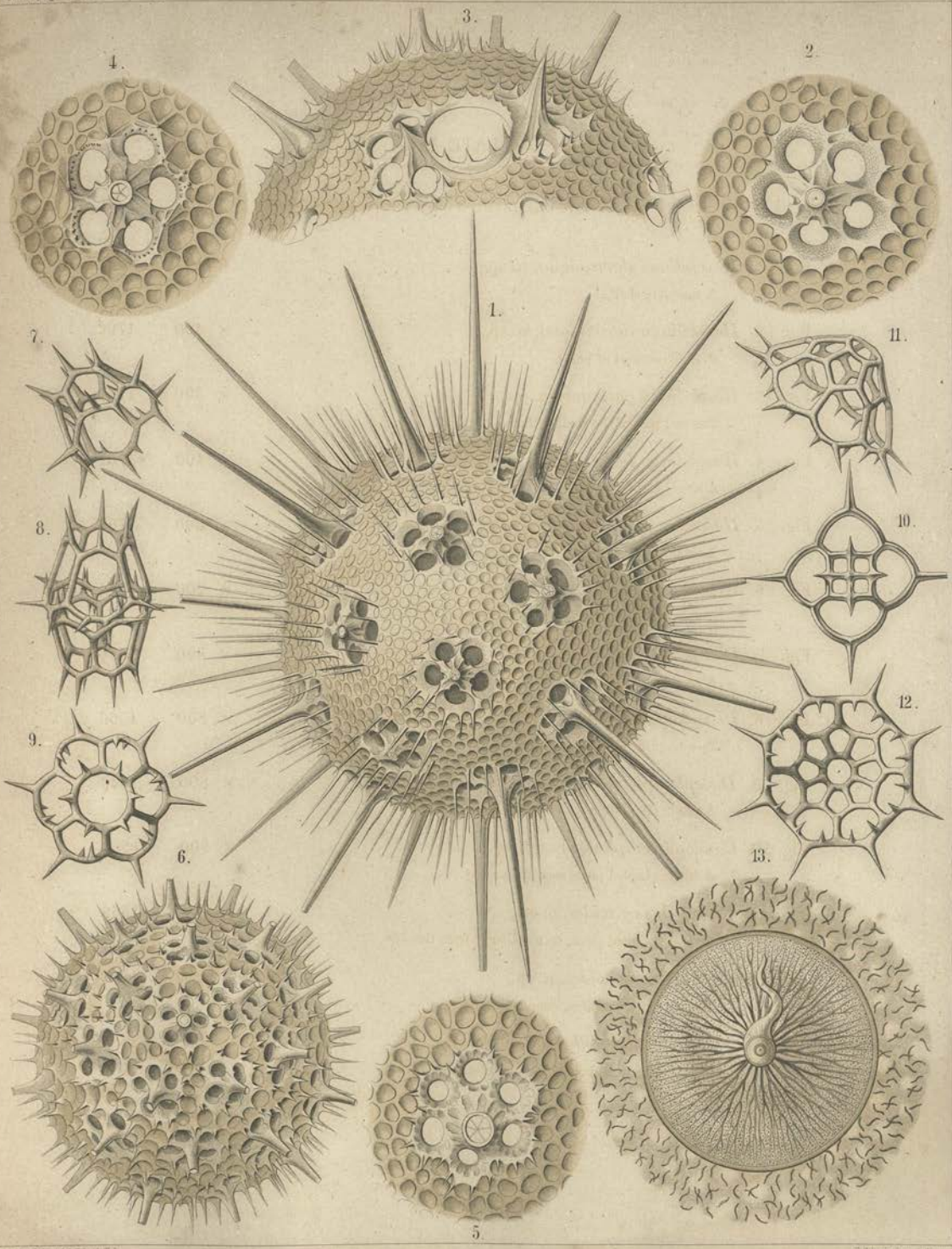
Orders PHÆOCYSTINA ET PHÆOGROMIA.

Families CANNORRHAPHIDA et CIRCOPORIDA.

PLATE 114.

CANNORRHAPHIDA et CIRCOPORIDA.

		Diam.	Page
Fig. 1.	*Haeckeliana darwiniana*, n. sp., A complete shell.	× 200	1702
Fig. 2.	*Haeckeliana darwiniana*, n. sp., A single coronet of pores.	× 400	1702
Fig. 3.	*Haeckeliana gœtheana*, n. sp., The oral part of the shell with the mouth.	× 300	1702
Fig. 4.	*Haeckeliana lamarckiana*, n. sp., A single coronet of pores.	× 400	1701
Fig. 5.	*Haeckeliana maxima*, n. sp., A single coronet of pores.	× 300	1701
Fig. 6.	*Haeckeliana porcellana*, John Murray, A complete shell.	× 200	1701
Fig. 7.	*Distephanus corona*, n. sp., A single pileated piece (half from the side, half from below).	× 800	1566
Fig. 8.	*Distephanus corona*, n. sp., Two coupled pileated pieces caught into one another (twin-piece).	× 800	1566
Fig. 9.	*Distephanus corona*, n. sp., A single pileated piece, seen from above.	× 800	1566
Fig. 10.	*Cannopilus diplostaurus*, n. sp., A single pileated piece, seen from above.	× 800	1568
Fig. 11.	*Cannopilus cyrtoides*, n. sp., A single pileated piece, seen obliquely from the side.	× 800	1569
Fig. 12.	*Cannopilus cyrtoides*, n. sp., A single pileated piece, seen from below.	× 800	1569
Fig. 13.	*Haeckeliana porcellana*, John Murray, The radiate operculum of the central capsule.	× 600	1526



E. Haeckel and A. Gilbach, Del. E. Gilbach, Jena, Lithogr.

1-6. HAECKELIANA. 7-9. DISTEPHANUS. 10-13. CANNOPILUS.

PLATE 115.

Legion PHÆODARIA.

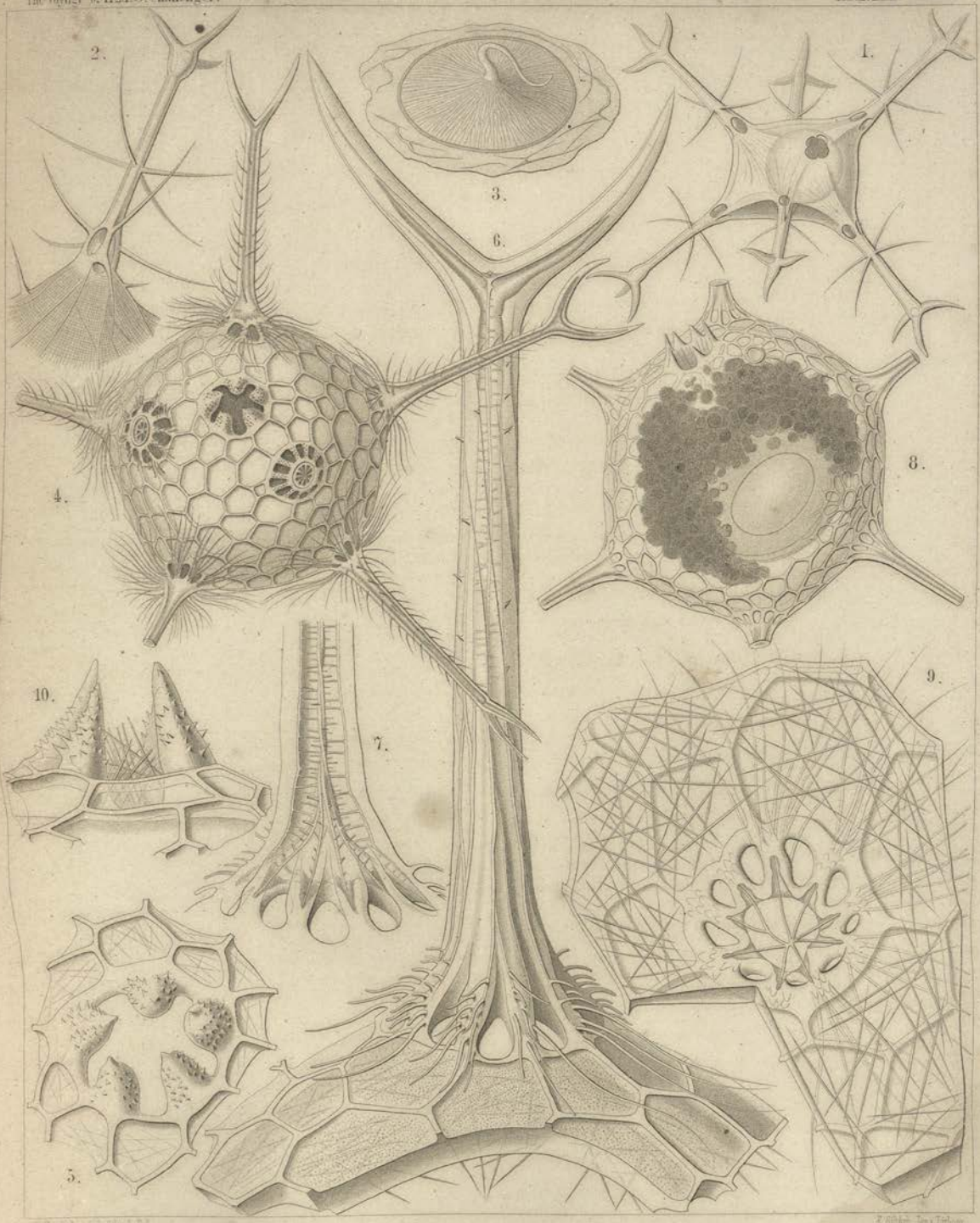
Order PHÆOGROMIA.

Family CIRCOPORIDA.

PLATE 115.

CIRCOPORIDA.

		Diam.	Page
Fig. 1.	*Circoporus sexfuscinus*, n. sp., ...	× 100	1695
	The cruciform mouth is visible in the upper part of the figure, to the right.		
Fig. 2.	*Circoporus sexfuscinus*, n. sp., ...	× 200	1695
	A single radial spine, with four cruciate pores at the base.		
Fig. 3.	*Circoporus sexfuscinus*, n. sp., ...	× 600	1695
	The radiate operculum of the central capsule, with the proboscis.		
Fig. 4.	*Circospathis furcata*, n. sp., ...	× 100	1696
	Five of the nine spines are visible, two others (on the upper face) broken off. Between the latter the pentagonal mouth (with five teeth).		
Fig. 5.	*Circospathis furcata*, n. sp., ...	× 300	1696
	The mouth with its five teeth.		
Fig. 6.	*Circospathis furcata*, n. sp., ...	× 400	1696
	A piece of the shell with a radial spine.		
Fig. 7.	*Circospathis furcata*, n. sp., . . .	× 400	1696
	Vertical section through the base of a radial spine, to show the central funicle.		
Fig. 8.	*Circogonia dodecacantha*, n. sp., ...	× 100	1698
	The central capsule with the elliptical nucleus (to the right) and the dark phæodium (to the left) are visible, in the upper part (to the left) the mouth of the shell, with six teeth.		
Fig. 9.	*Circogonia dodecacantha*, n. sp., ...	× 400	1698
	A fragment of the shell, exhibiting its peculiar structure (needles tangentially scattered in the cement of the porcellanous substance), and a circle of nine pores around the base of a broken spine.		
Fig. 10.	*Circospathis tetrodonta*, n. sp., . . .	× 400	1697
	The mouth with four teeth, in profile view.		



1-3. CIRCOPORUS. 4-10. CIRCOSPATHIS.

PLATE 116.

Legion PHÆODARIA.

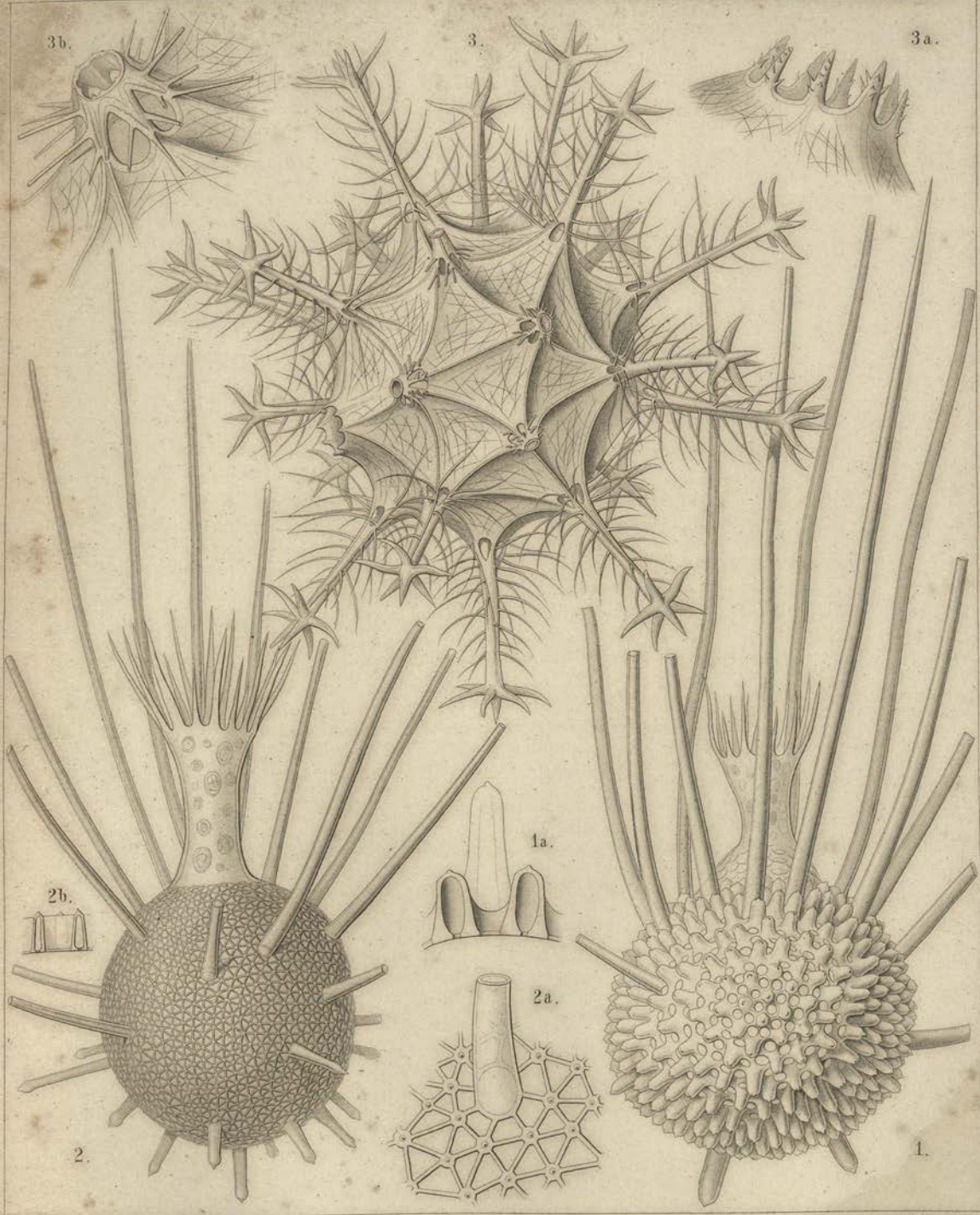
Order PHÆOGROMIA.

Families MEDUSETTIDA et CIRCOPORIDA.

PLATE 116.

MEDUSETTIDA et CIRCOPORIDA.

		Diam.	Page
Fig. 1. *Polypetta mammillata*, n. sp.,	×	500	1677
In the upper part of the figure the dentate proboscis.			
Fig. 1*a*. Vertical section through the shell-wall, showing two of the hollow alveoles, opening on its inside,	×	1000	
Fig. 2. *Polypetta tabulata*, n. sp.,	×	500	1677
In the upper part of the figure the dentate proboscis.			
Fig. 2*a*. A piece of the shell, seen from the surface, with the triangular plates,	×	1000	
Fig. 2*b*. Vertical section through the shell-wall, with an alveole,	×	1000	
Fig. 3. *Circostephanus coronarius*, n. sp.,	×	150	1699
The polyhedral shell exhibits in its wall the small tangential needles. The radial spines are partly broken off. The mouth of the shell, surrounded by eight short conical teeth, is visible on the left side of the figure.			
Fig. 3*a*. The mouth of the shell, seen in profile, with eight conical spinulate teeth,	×	400	
Fig. 3*b*. The base of a radial spine broken off, to show the corona of (five or six) basal pores,	×	400	



E. Haeckel and J. Gibsch Del. E. Gibsch, Jena. Lithogr.

1. 2. POROSPATHIS, 3. CIRCOSTEPHANUS.

PLATE 117.

Legion PHÆODARIA.

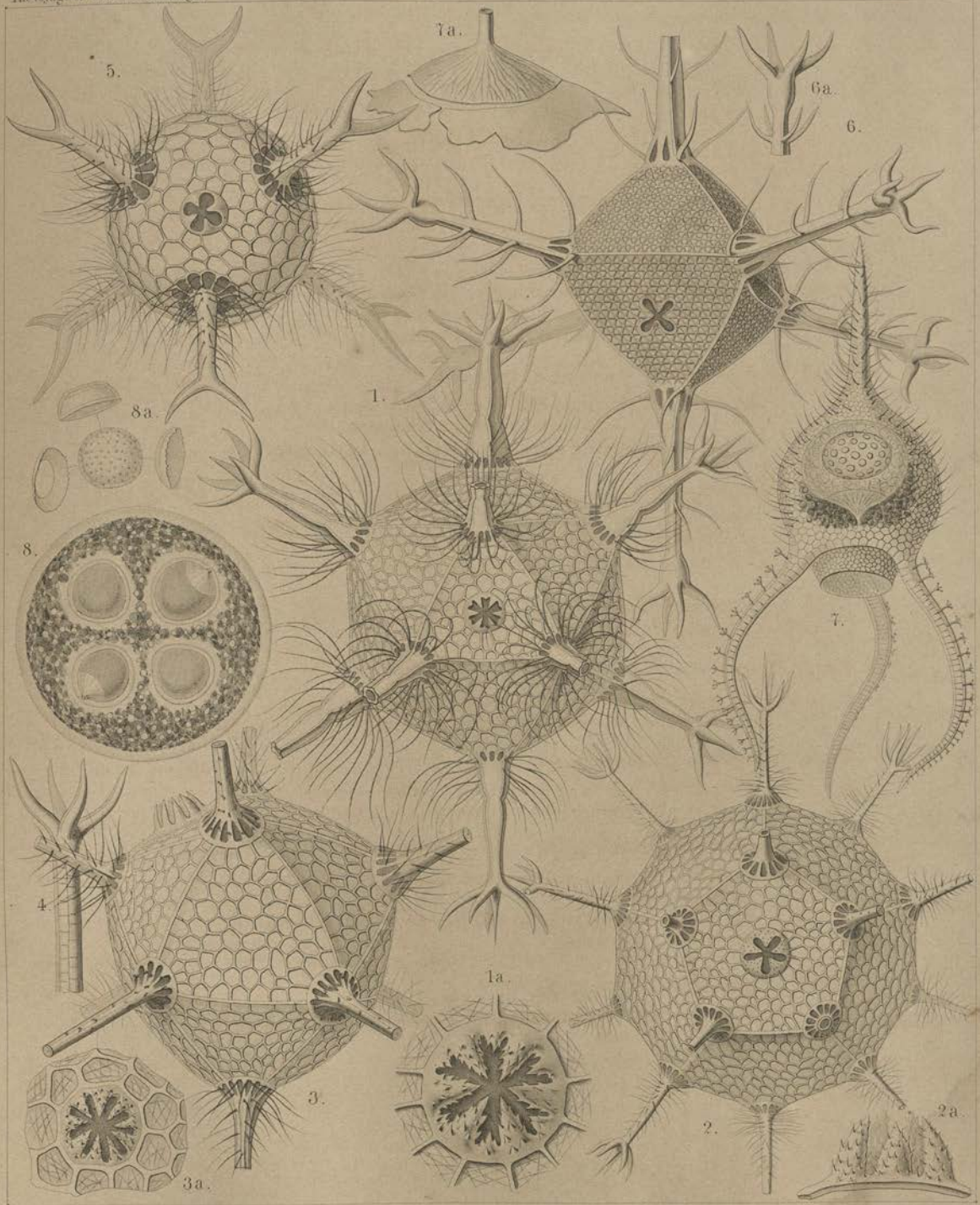
Orders PHÆOCYSTINA ET PHÆOGROMIA.

Families CANNORRHAPHIDA, MEDUSETTIDA et CIRCOPORIDA.

PLATE 117.

CANNORRHAPHIDA, MEDUSETTIDA et CIRCOPORIDA.

		Diam.	Page
Fig. 1.	*Circogonia icosahedra*, n. sp., ...	× 80	1698
	The entire shell, with twelve radial tubes and twenty triangular faces. In the centre of one face is the mouth, with six teeth.		
	Fig. 1*a*. The mouth alone, with its six spinulate teeth, . .	× 400	
Fig. 2.	*Circorrhegma dodecahedra*, n. sp., ...	× 80	1699
	The entire shell, with twenty radial tubes and twelve pentagonal faces. In the centre of one face is the mouth, with five teeth.		
	Fig. 2*a*. The mouth alone, with its five spinulate teeth, seen in profile,	× 200	
Fig. 3.	*Circospathis novena*, n. sp., ...	× 100	1696
	The entire shell, with nine radial tubes and fourteen triangular faces. In one face (to the left above) is the mouth with nine teeth.		
	Fig. 3*a*. The mouth alone, with its nine spinulate teeth, . .	× 150	
Fig. 4.	*Circoporus hexastylus*, n. sp., ...	× 80	1695
	A single radial spine.		
Fig. 5.	*Circoporus sexfurcus*, n. sp., ...	× 80	1694
	The entire spherical shell with six forked and ciliated radial tubes. In the centre the cruciform mouth with four teeth.		
Fig. 6.	*Circoporus octahedrus*, n. sp., ...	× 300	1695
	The entire shell, with six verticillate radial tubes and eight triangular faces. In the centre of one face is the mouth, with four teeth.		
Fig. 7.	*Cortinetta tripodiscus*, n. sp., ...	× 300	1667
	The entire shell with the enclosed central capsule, and the phæodium around the astropyle.		
	Fig. 7*a*. The astropyle, partly detached from the wall of the central capsule, seen in profile, ...	× 800	
Fig. 8.	*Catinulus quadrifidus*, n. sp., ...	× 80	1553
	A complete specimen, with four equal central capsules, united in a single spherical calymma.		
	Fig. 8*a*. Some single pieces of the skeleton, . . .	× 400	



S. Haeckel and A. Giltsch, Del. A. Giltsch, Jena, Lithogr.

1. CIRCOGONIA. 2. CIRCORRHEGMA. 3. CIRCOSPATHIS.
4–6. CIRCOPORUS. 7. CORTINETTA. 8. CATINULUS.

PLATE 118.

Legion PHÆODARIA.

Order PHÆOGROMIA.

Family MEDUSETTIDA.

PLATE 118.

MEDUSETTIDA.

	Diam.	Page
Fig. 1. *Gazelletta melusina*, n. sp., ...	× 300	1674

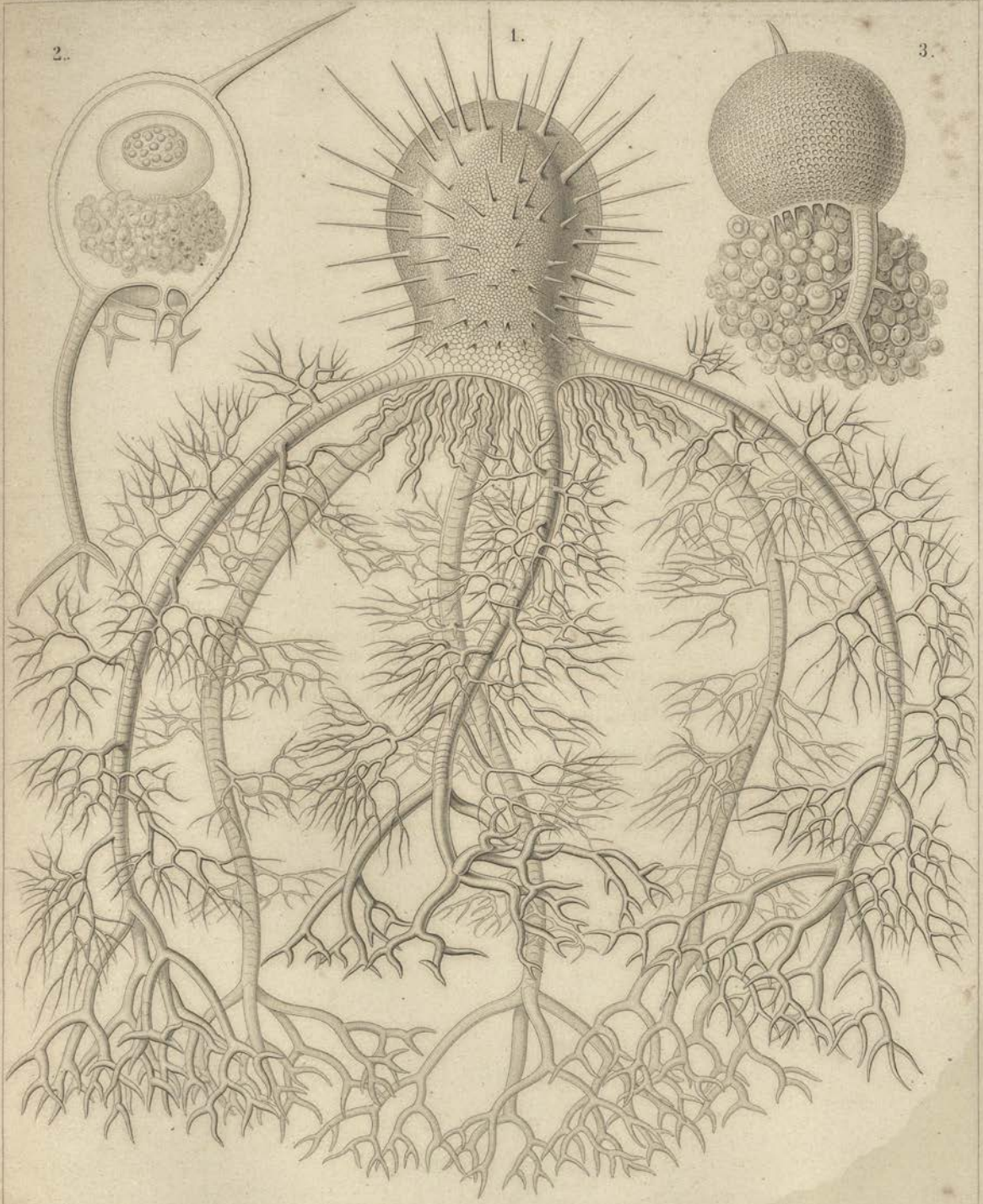
From the peristome of the thorny campanulate shell arise six large descending feet, which are studded with arborescent fragile lateral branches, and armed at the distal end with stouter dichotomous terminal branches.

Fig. 2. *Euphysetta staurocodon*, n. sp., ...	× 300	1670

The peristome of the ovate shell bears an odd large foot with three terminal branches and three cruciate rudimentary feet. In the upper part of the shell-cavity is visible the sphæroidal central capsule (containing a nucleus of half the size, with numerous nucleoli); in the lower half the dark pigment-masses of the green phæodium.

Fig. 3. *Euphysetta amphicodon*, n. sp., ...	× 300	1670

The shell-wall exhibits the regular alveolate structure. From the mouth are prominent large masses of the phæodium, which is more voluminous than the shell-cavity, and seems to contain nucleated cells.



E. Haeckel and A. Giltsch Del. E. Stirch, Jena, Lithogr.

1. GAZELLETTA, 2. 3. EUPHYSETTA.

PLATE 119.

Legion PHÆODARIA.

Order PHÆOGROMIA.

Family MEDUSETTIDA.

PLATE 119.

MEDUSETTIDA.

		Diam.	Page
Fig. 1.	*Gorgonetta mirabilis*, n. sp., ...	× 100	1674

The entire body. From the margin of the cap-shaped shell arise six ascending arborescent feet and six alternating descending feet, which are covered with anchor-pencils and branched at the distal end. From the mouth of the delicately alveolate shell depend prominent parts of the dark voluminous phæodium.

Fig. 2.	*Gorgonetta mirabilis*, n. sp., ...	× 300	1674

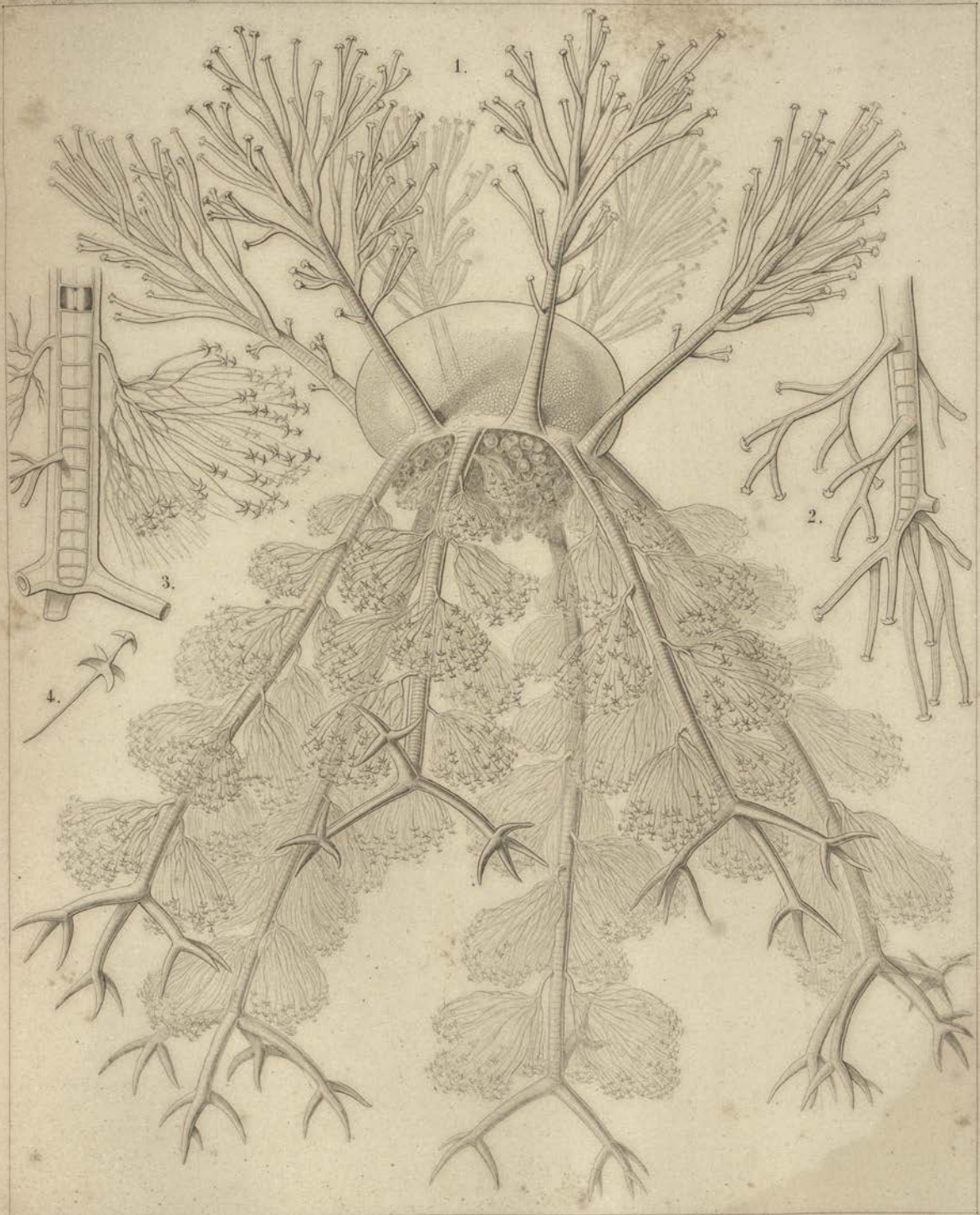
The distal end of an ascending foot; the branches bear a terminal spathilla with small recurved teeth.

Fig. 3.	*Gorgonetta mirabilis*, n. sp., ...	× 300	1674

The distal end of a descending foot, with three lateral anchor-pencils and three terminal branches (broken off). One alveole contains an air-bubble.

Fig. 4.	*Gorgonetta mirabilis*, n. sp., ...	× 600	1674

A single thread of an anchor-pencil, with two quadridentate spathillæ, a larger proximal and a smaller distal (terminal).



K. Haeckel and A. Giltsch del.

R. Giltsch Jena Lithogr.

GORGONETTA.

PLATE 120.

Legion PHÆODARIA.

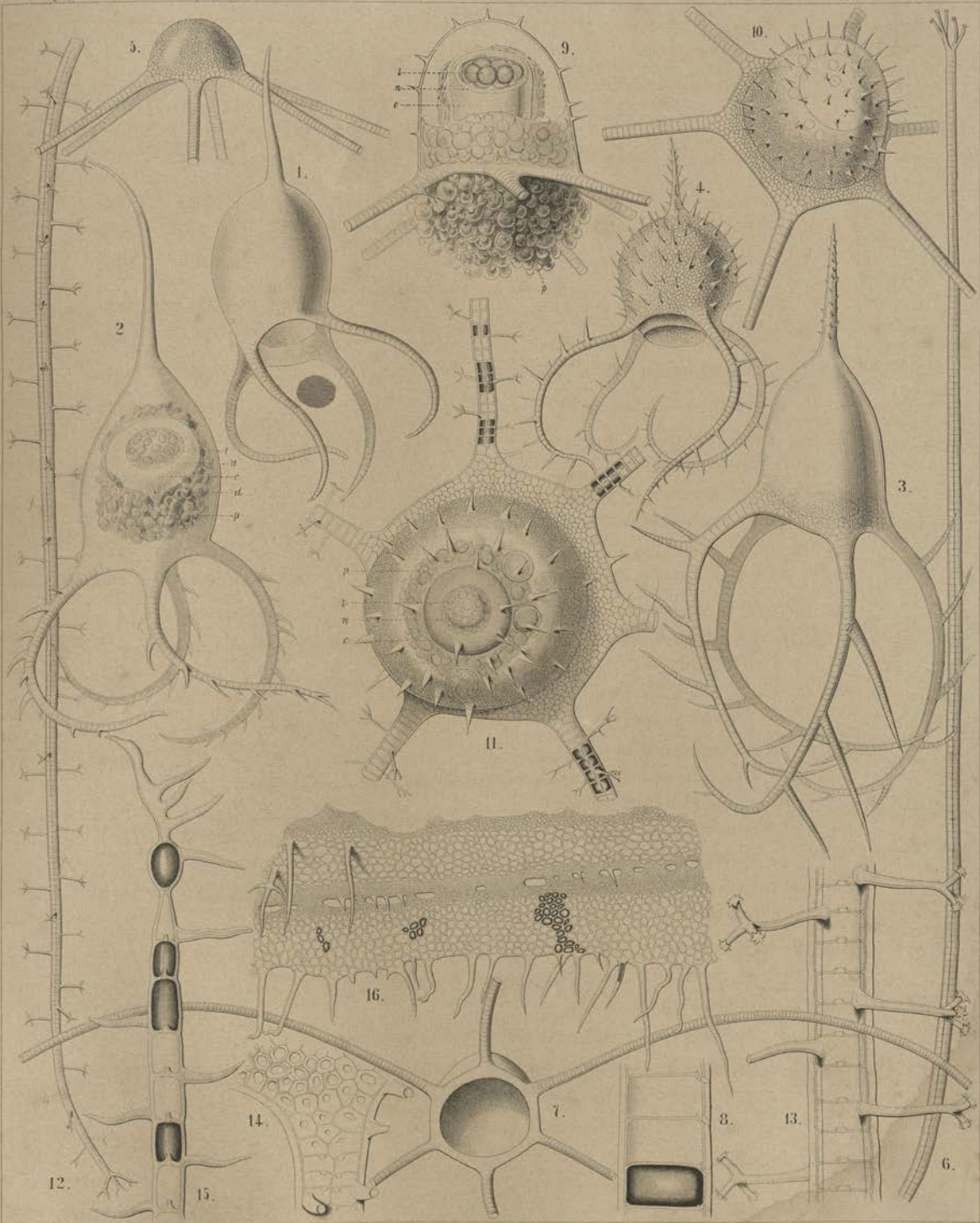
Order PHÆOGROMIA.

Family MEDUSETTIDA.

PLATE 120.

MEDUSETTIDA.

		Diam.	Page
Fig. 1.	*Medusetta codonium*, n. sp.,	× 400	1668
Fig. 2.	*Medusetta quadrigata*, n. sp.,	× 400	1668
	The central capsule is visible in the upper half, the phæodium in the lower half of the shell-cavity.		
Fig. 3.	*Medusetta tetranema*, n. sp.,	× 400	1669
Fig. 4.	*Medusetta craspedota*, n. sp.,	× 400	1669
Fig. 5.	*Gazelletta hexanema*, n. sp.,	× 300	1671
Fig. 6.	*Gazelletta bifurca*, n. sp.,	× 300	1672
	A single alveolate foot.		
Fig. 7.	*Gazelletta macronema*, n. sp.,	× 200	1671
	Oral view of the shell.		
Fig. 8.	*Gazelletta macronema*, n. sp.,	× 800	1671
	Three joints of an alveolate foot.		
Fig. 9.	*Gazelletta cyrtonema*, n. sp.,	× 300	1671
	The upper part of the shell encloses the central capsule with its nucleus. The voluminous phæodium is prominent over the mouth.		
Fig. 10.	*Gazelletta orthonema*, n. sp.,	× 200	1671
	The central capsule and its nucleus are visible in the shell-cavity.		
Fig. 11.	*Gazelletta schleinitzii*, n. sp.,	× 400	1673
	Oblique apical view, with the enclosed central capsule, the nucleus of which contains numerous nucleoli.		
Fig. 12.	*Gazelletta schleinitzii*, n. sp.,	× 300	1673
	A single alveolate foot.		
Fig. 13.	*Gazelletta trispathilla*, n. sp.,	× 400	1673
	The middle part of a foot.		
Fig. 14.	*Gazelletta robusta*, n. sp.,	× 300	1673
	The base of a foot, exhibiting the pores of the alveoli.		
Fig. 15.	*Gazelletta studeri*, n. sp.,	× 400	1673
	The distal end of a foot; four alveoli filled up by air-bubbles.		
Fig. 16.	*Gazelletta dendronema*, n. sp.,	× 300	1674
	A part of the velum, seen from the inside. The alveoles are partly filled by air.		



1-4. MEDUSETTA, 5-16. GAZELLETTA.

PLATE 121.

Legion PHÆODARIA.

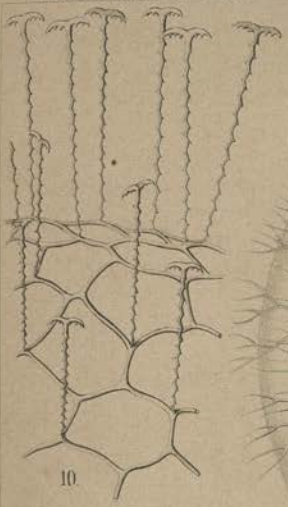
Order PHÆOCONCHIA.

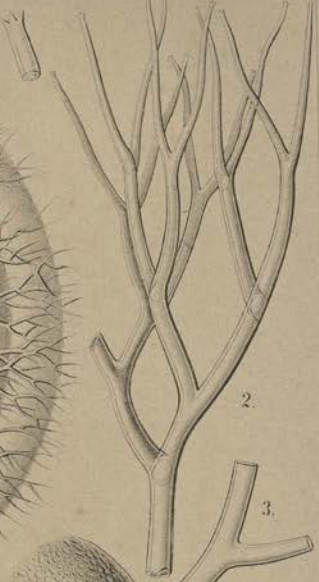
Family CŒLODENDRIDA.

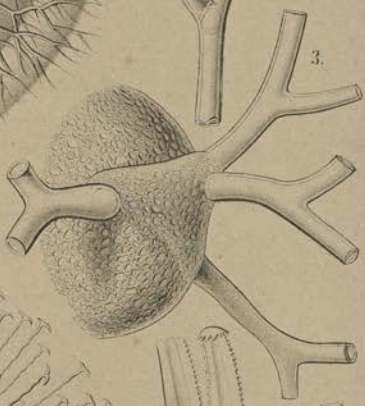
PLATE 121.

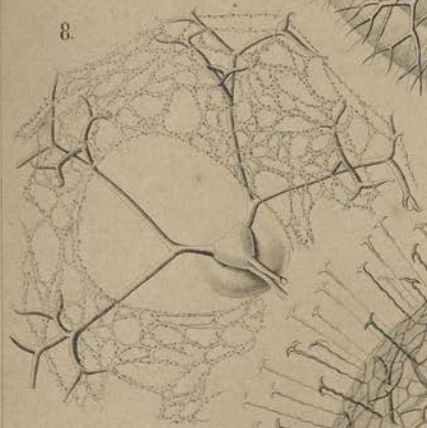
CŒLODENDRIDA.

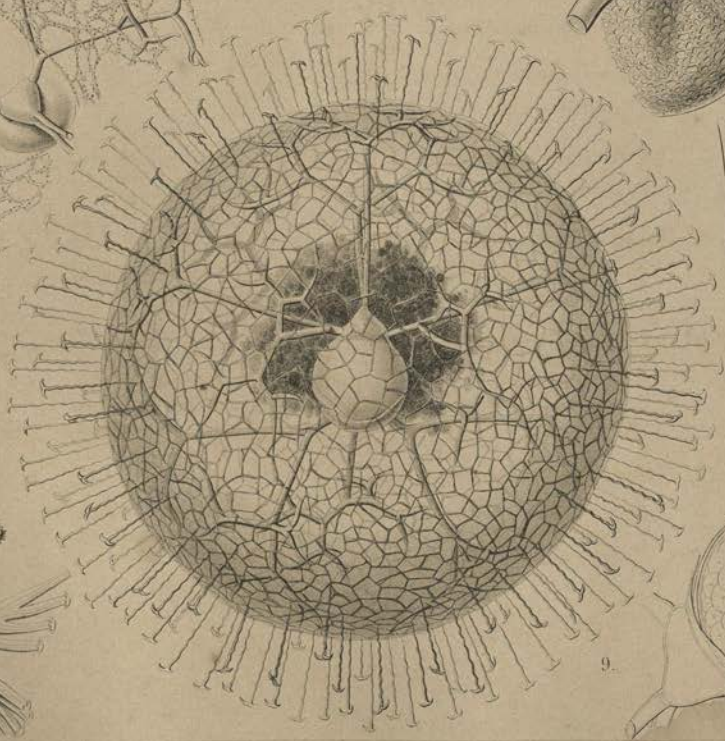
		Diam.	Page
Fig. 1.	*Cœlodendrum furcatissimum*, n. sp., . . .	× 50	1735
	A complete specimen with the central capsule and the big phæodium. The spherical calymma envelops almost the entire skeleton.		
Fig. 2.	*Cœlodendrum furcatissimum*, n. sp., . . .	× 300	1735
	A distal branch with its terminal ramification.		
Fig. 3.	*Cœlodendrum furcatissimum*, n. sp., . . .	× 100	1735
	One valve of the shell, with its galea and the four hollow forked tubes arising from it.		
Fig. 4.	*Cœlodendrum furcatissimum*, n. sp., . . .	× 100	1735
	The central capsule with its nucleus; on the left side one valve of the closely enveloping shell (seen in vertical section), and its galea with the origin of the four tubes.		
Fig. 5.	*Cœlodendrum serratum*, n. sp., ...	× 400	1737
	A flabellate terminal branch.		
Fig. 6.	*Cœlodendrum flabellatum*, n. sp., ...	× 150	1737
	A flabellate terminal branch.		
Fig. 7.	*Cœlodendrum spinosissimum*, n. sp., . . .	× 300	1735
	Forked distal end of a terminal branch.		
Fig. 8.	*Cœlodendrum cervicorne*, n. sp., ...	× 150	1736
	One valve of the shell, with its galea and the four tubes arising from it. A network of protoplasm connects the distal branches.		
Fig. 9.	*Cœlodrymus ancoratus*, n. sp., ...	× 50	1738
	A complete specimen, with the central capsule and the enveloping phæodium. The surface of the spherical calymma is covered by a dense network, from which arise numerous, anchor-bearing, radial tubules.		
Fig. 10.	*Cœlodrymus ancoratus*, n. sp., ...	× 150	1738
	A small piece of the superficial network of the skeleton, with the zigzag radial tubules arising from it, each of which bears an anchor with two recurved denticulate teeth on the distal end.		

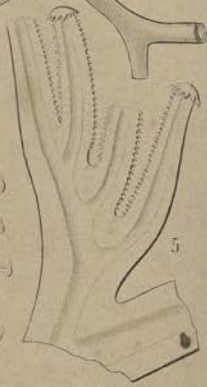


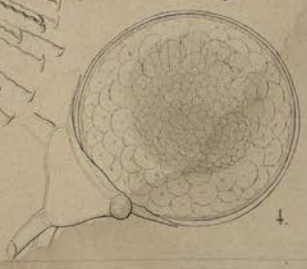












1-8 COELODENDRUM, 9.10 COELODRYMUS.

PLATE 122.

Legion PHÆODARIA.

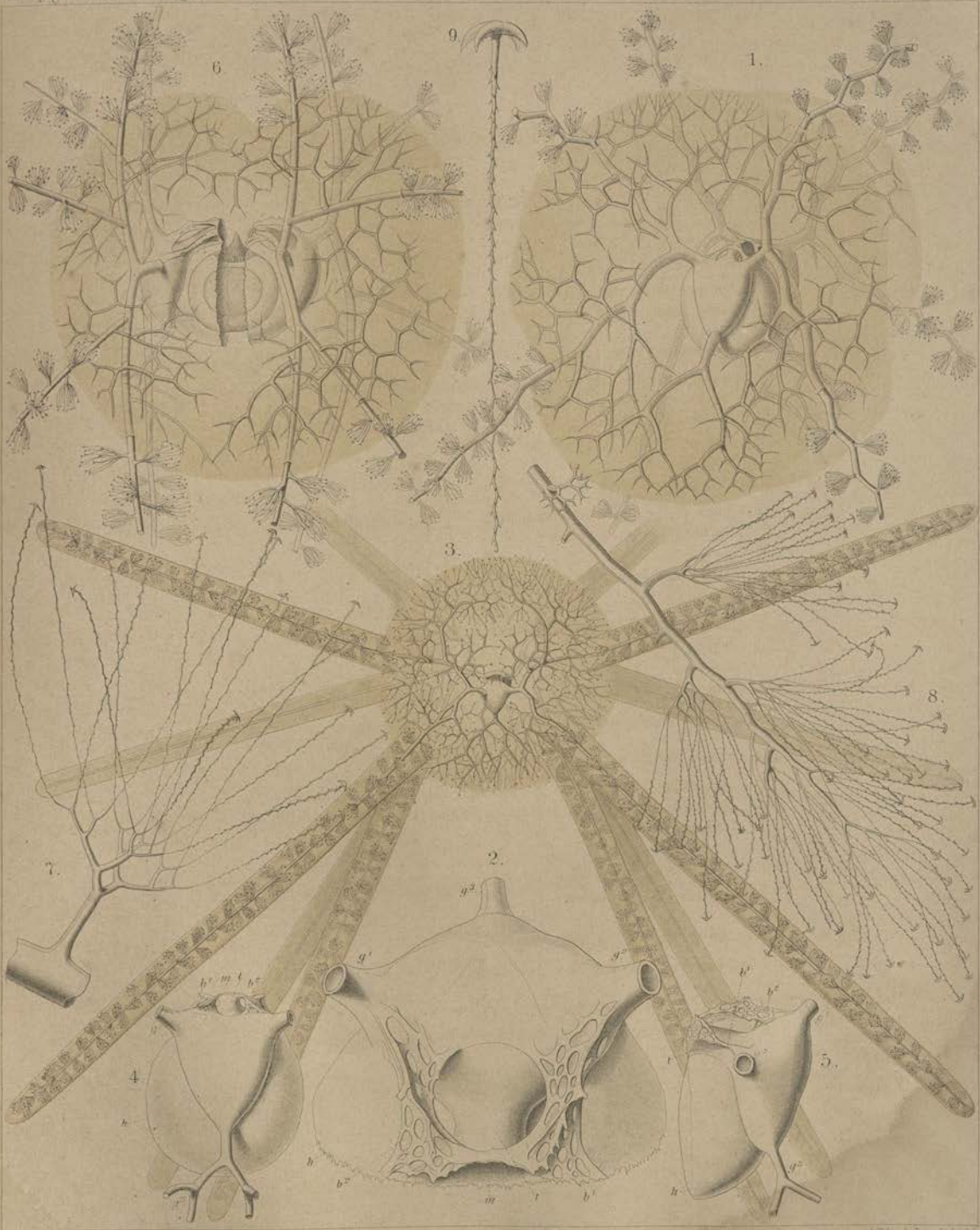
Order PHÆOCONCHIA.

Family CŒLOGRAPHIDA.

PLATE 122.

Cœlographida.

		Diam.	Page
Fig. 1.	*Cœlotholus octonus*, n. sp., ...	× 30	1749
	The entire bivalved shell, seen obliquely from the dorsal and somewhat from the right side, enveloped by the yellowish calymma.		
Fig. 2.	*Cœlotholus octonus*, n. sp., ...	× 100	1749
	One valve of the shell (h) with its large galea and the origin of the three styles. The base of the two lateral styles (g^1, g^2) is connected by two latticed lateral frenula (b^1, b^2) with the mouth (m) of the rhinocanna (t). The odd style (g^3) is free.		
Fig. 3.	*Cœlothauma duodenum*, n. sp., ...	× 20	1750
	The entire shell, seen from the dorsal side. The long styles are enveloped by the yellowish calymma.		
Fig. 4.	*Cœlothauma duodenum*, n. sp., ...	× 80	1750
	One valve of the shell (h), seen from the apical side; t, rhinocanna; m, its mouth; b^1, b^2, the two lateral frenula; g^1, g^2, the two paired styles; g^3, the odd style.		
Fig. 5.	*Cœlothauma duodenum*, n. sp., ...	× 80	1750
	One valve of the shell, seen in profile. Characters as in fig. 4.		
Fig. 6.	*Cœlothamnus bivalvis*, n. sp., ...	× 30	1751
	The entire shell, enveloped by the yellowish calymma, seen from the left side; between the two valves is the central capsule, with nucleus and astropyle.		
Fig. 7.	*Cœlothamnus bivalvis*, n. sp., ...	× 100	1751
	A single lateral anchor-pencil.		
Fig. 8.	*Cœlothamnus bivalvis*, n. sp., ...	× 200	1751
	Distal end of a style, with its anchor-pencils.		
Fig. 9.	*Cœlothamnus bivalvis*, n. sp., ...	× 400	1751
	A single anchor-thread, with its quadridentate terminal spathilla.		



E. Haeckel and A. Giltsch Del. A. Giltsch Jena Lithogr.

COELOTHOLUS

PLATE 123.

Legion PHÆODARIA.

Order PHÆOCONCHIA.

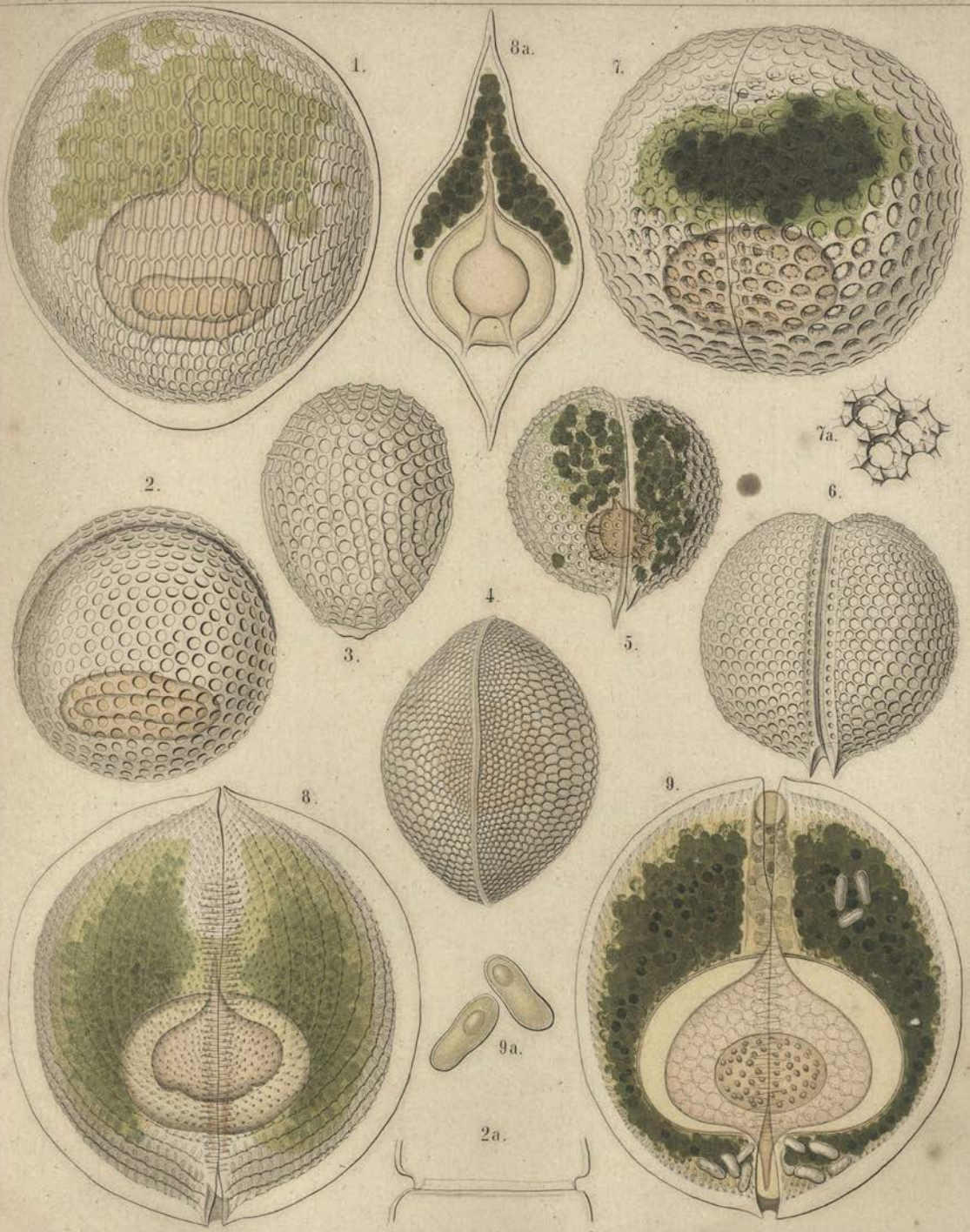
Family CONCHARIDA.

PLATE 123.

CONCHARIDA.

(The central capsule is coloured red in the figures of this plate, the phæodium green).

		Diam.	Page
Fig. 1.	*Conchariun diatomeum*, n. sp., ...	×	1717
	Dorsal view. The central capsule (red) exhibits above the anterior tubular main-opening (astropyle), and below the two small posterior lateral openings (right and left parapylæ).		
Fig. 2.	*Conchariun bivalvum*, n. sp., ...	× 150	1717
	Dorsal view. The central capsule is visible in the lower part, the margin of the two valves in the upper part of the figure.		
	Fig. 2*a* exhibits the two smooth lateral margins of the valves, catching into one another. (Lateral view).		
Fig. 3.	*Conchariun nucula*, n. sp., ...	×	1717
	The dorsal valve alone, seen from the outside.		
Fig. 4.	*Conchariun bacillarium*, n. sp., ...	×	1718
	Lateral view from the smooth margin, by which the two valves are united.		
Fig. 5.	*Conchasma radiolites*, n. sp., ...	× 300	1719
	Lateral view. In the aboral half of the shell-cavity lies the red central capsule, in the oral half the green phæodium.		
Fig. 6.	*Conchasma sphærulites*, n. sp., ...	× 300	1719
	Lateral view. On the aboral pole the two horns of the hinge.		
Fig. 7.	*Conchellium tridacna*, n. sp., ...	× 200	1720
	Oblique lateral view (from the right and ventral side).		
	Fig. 7*a*. Three pores of the same, with their hexagonal frames and six internal denticles, ...	× 400	
Fig. 8.	*Conchopsis carinata*, n. sp., ...	× 150	1725
	Lateral view, from the left side.		
Fig. 9.	*Conchopsis lenticula*, n. sp., ...	× 150	1726
	Lateral view, from the right side. The two membranes of the central capsule are separated by a wide interval in this and the preceding figure. The nucleus contains numerous nucleoli.		
	Fig. 9*a*. Two of the peculiar cells, which are contained in the green phæodium in large numbers, ...	× 400	



E. Haeckel del. et A. Giltsch. Del. E. Giltsch. Jena, Lithogr.

1-4. CONCHARIUM, 5.6. CONCHASMA, 7. CONCHELLIUM,
8,9. CONCHOPSIS.

PLATE 124.

Legion PHÆODARIA.

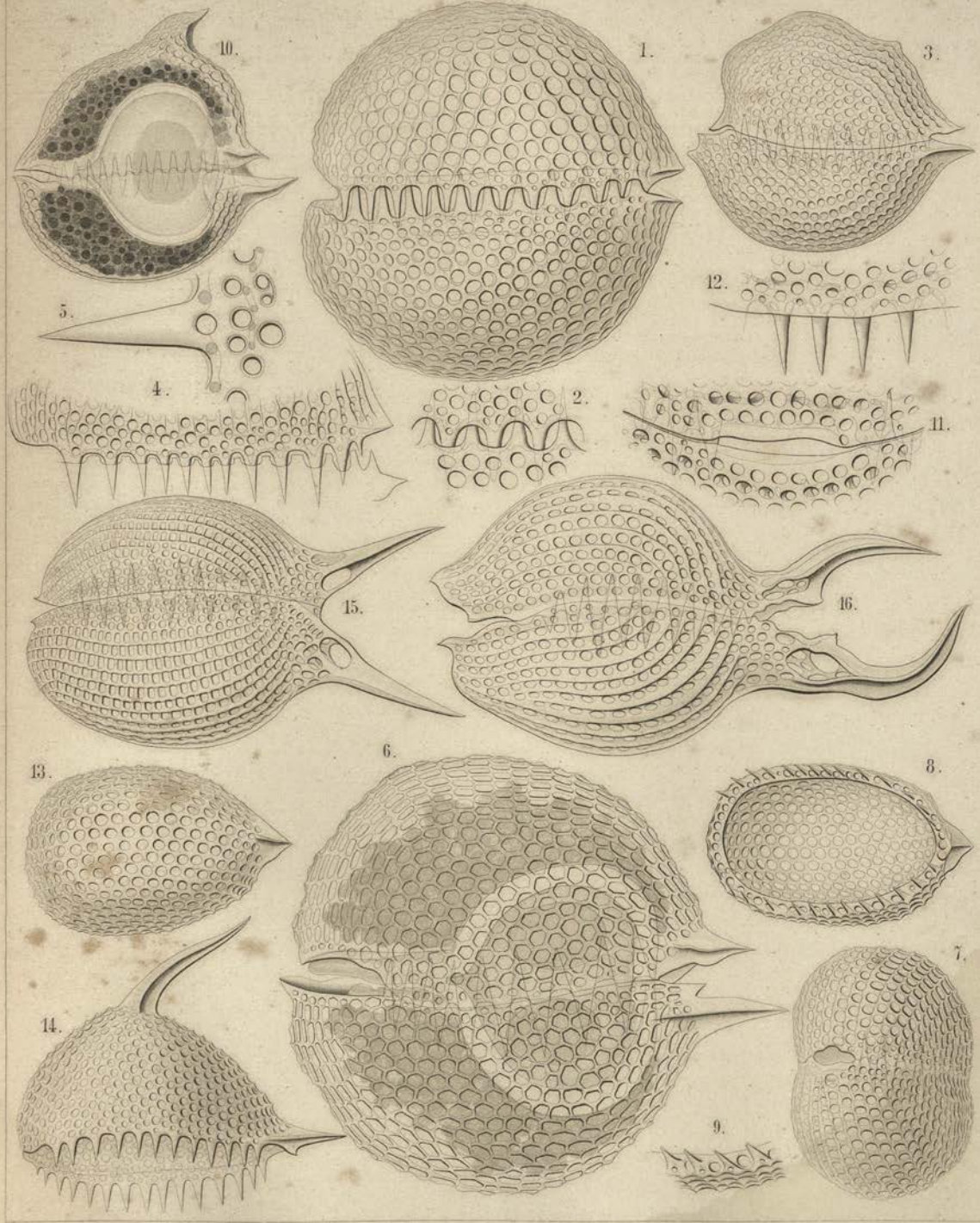
Order PHÆOCONCHIA.

Family CONCHARIDA.

PLATE 124.

CONCHARIDA.

		Diam.	Page
Fig. 1.	*Conchidium terebratula*, n. sp., Lateral view, from the left side.	× 400	1721
Fig. 2.	*Conchidium terebratula*, n. sp., A piece of the frontal girdle-fissure, with the teeth of both valves catching into one another.	× 800	1721
Fig. 3.	*Conchidium rhynchonella*, n. sp., Lateral view, from the left side.	× 200	1722
Fig. 4.	*Conchidium leptæna*, n. sp., Girdle-fissure with the teeth, seen from the left side.	× 300	1722
Fig. 5.	*Conchidium leptæna*, n. sp., A single tooth with its base.	× 800	1722
Fig. 6.	*Conchidium thecidium*, n. sp., Lateral view, from the left side. In the oral part of the shell-cavity the dark phæodium, in the aboral part the central capsule with two nuclei (a dorsal and a ventral).	× 300	1721
Fig. 7.	*Conchidium argiope*, n. sp., Oblique oral view (half from the anterior, half from the left side).	× 300	1722
Fig. 8.	*Conchidium argiope*, n. sp., Dorsal valve, from below.	× 300	1722
Fig. 9.	*Conchidium argiope*, n. sp., A piece of the valve margin, with four teeth.	× 600	1722
Fig. 10.	*Conchonia diodon*, n. sp., Lateral view, from the left side. In the anterior part of the shell-cavity the dark phæodium, in the posterior part the central capsule with the nucleus. The two valves are connected at the posterior hinge by a ligament (to the right in the figure).	× 200	1723
Fig. 11.	*Conchonia diodon*, n. sp., Mouth of the shell, with its two lips, seen from the oral pole.	× 400	1723
Fig. 12.	*Conchonia diodon*, n. sp., A piece of the valve-margin, with four teeth.	× 400	1723
Fig. 13.	*Conchonia triodon*, n. sp., Ventral valve, seen from the lower face.	× 300	1724
Fig. 14.	*Conchonia triodon*, n. sp., Dorsal valve, seen from the left side.	× 300	1724
Fig. 15.	*Conchoceras caudatum*, n. sp., Lateral view, from the left side.	× 300	1727
Fig. 16.	*Conchoceras cornutum*, n. sp., Lateral view, from the left side.	× 200	1728



E. Haeckel and A. Giltsch Del.

E. Giltsch Jena Lith. Inst.

1-14 CONCHIDIUM. 15.16 CONCHOCERAS.

PLATE 125.

Legion PHÆODARIA.

Order PHÆOCONCHIA.

Family CONCHARIDA.

PLATE 125.

CONCHARIDA.

Fig. 1. *Conchopsis aspidium*, n. sp., ... × 150 1726

Lateral view, from the left side.

Fig. 2. *Conchopsis aspidium*, n. sp., ... × 300 1726

The hinge of another specimen, in which the two valves are connected by a ligament (as in figs. 8 and 9, Pl. 123).

Fig. 3. *Conchopsis orbicularis*, n. sp., ... × 200 1725

Lateral view, from the left side.

Fig. 4. *Conchopsis navicula*, n. sp., ... × 150 1727

Lateral view, from the right side. In the lower (posterior) half of the figure is visible the central capsule with its dark nucleus, in the upper (anterior) half the phæodium with two broad sagittal wings.

Fig. 5. *Conchopsis navicula*, n. sp., ... × 400 1727

Three single pores with their hexagonal external frame and the dilated internal ovate or ampullaceous channel.

Fig. 6. *Conchopsis navicula*, n. sp., ... × 400 1727

Hinge of the shell, from the right side.

Fig. 7. *Conchopsis compressa*, n. sp., ... × 150 1725

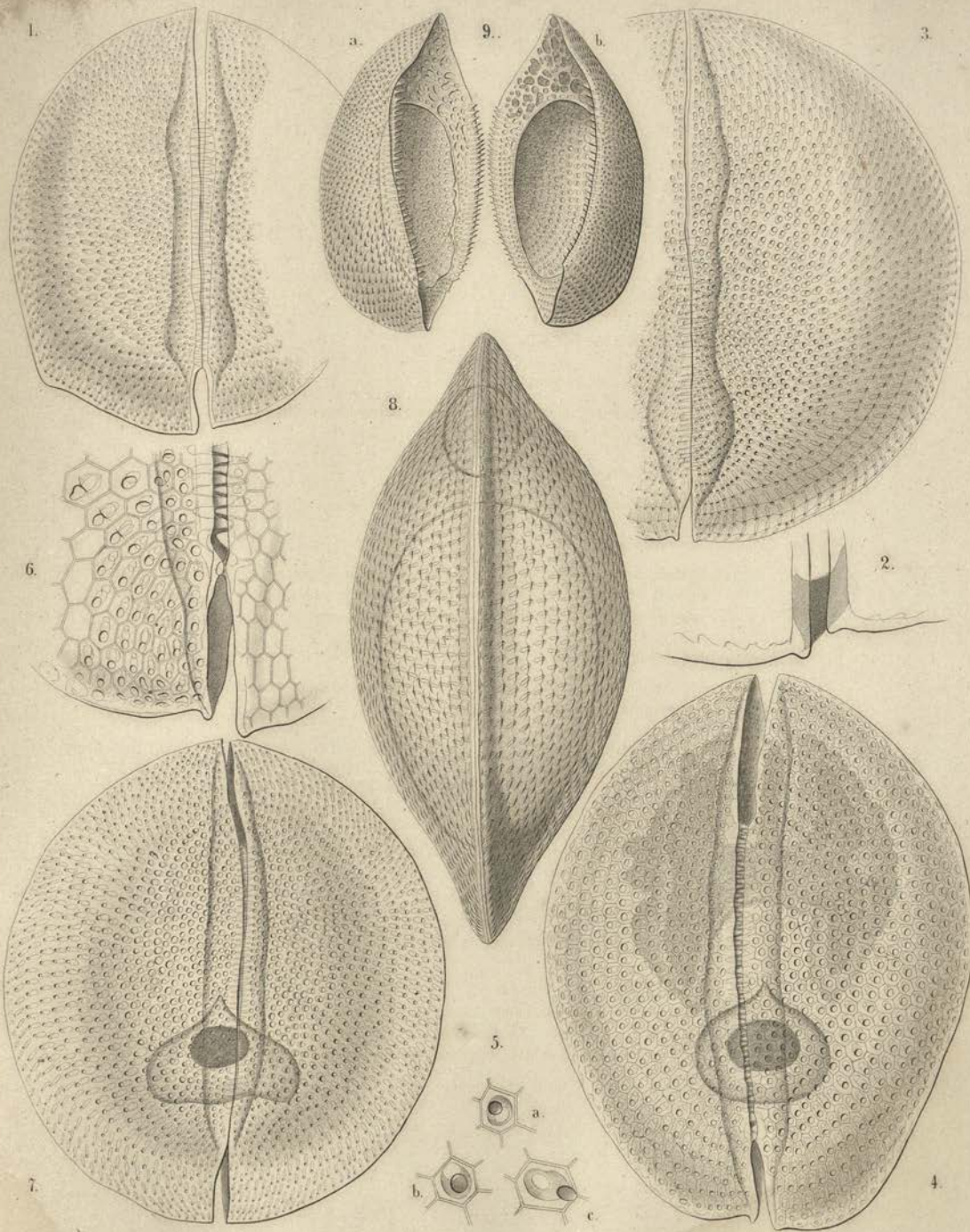
Lateral view from the left side. The triangular central capsule with the dark nucleus is visible.

Fig. 8. *Conchopsis compressa*, n. sp., ... × 150 1725

Dorsal view of the upper valve with its keel.

Fig. 9. *Conchopsis pilidium*, n. sp., ... × 80 1726

The two valves separated and seen obliquely, half from the lateral, half from the internal side. The inner opening of each valve is bordered and partly closed by a broad horizontal velum or diaphragm like the deck of a boat.



E. Haeckel and A. Gütsch Del. E. Gütsch Jena Lithogr.

CONCHOPSIS.

PLATE 126.

Legion PHÆODARIA.

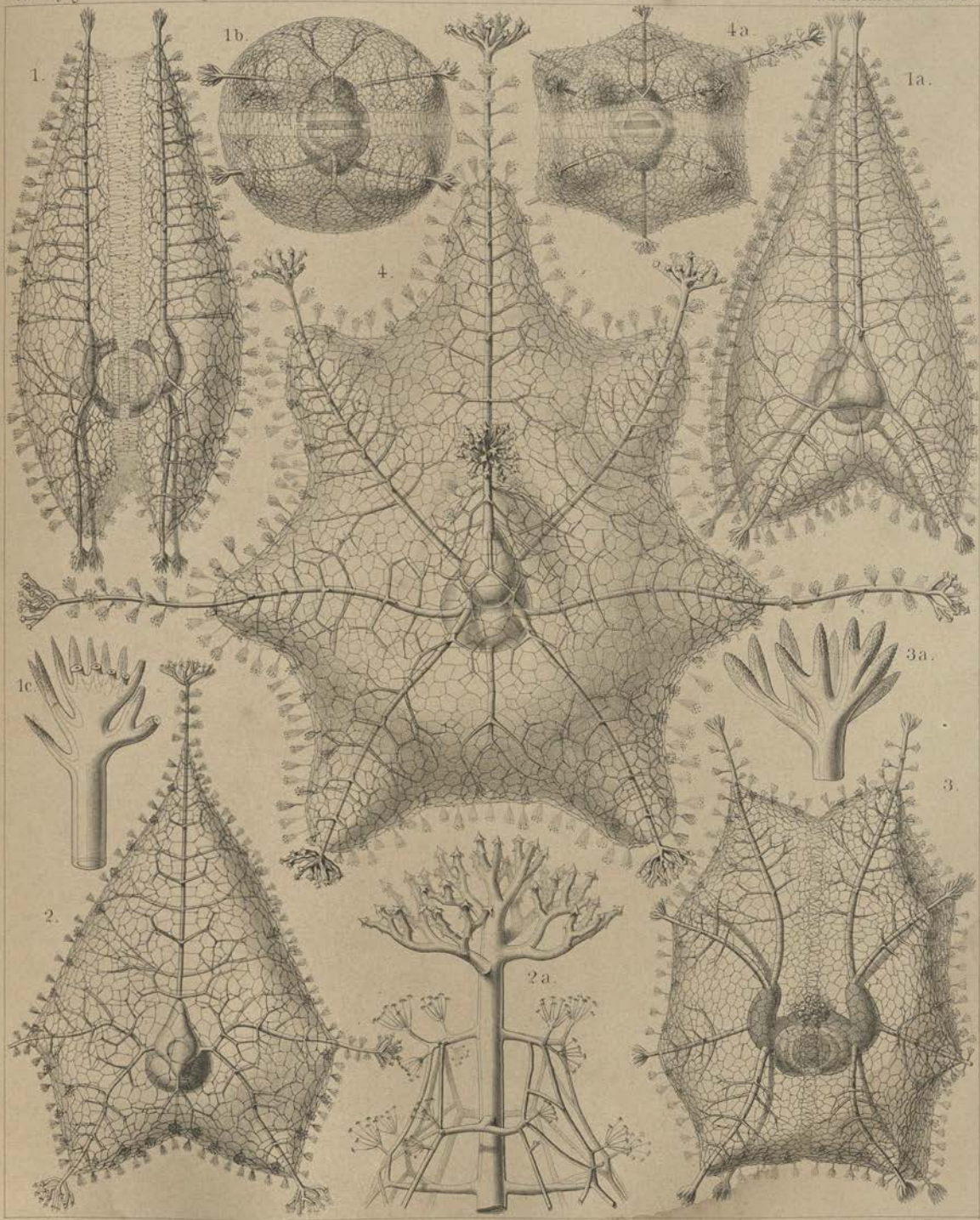
Order PHÆOCONCHIA.

Family CŒLOGRAPHIDA.

PLATE 126.

CŒLOGRAPHIDA.

		Diam.	Page
Figs. 1–1*c*.	*Cœlographis regina*, n. sp., ...		1752
	Fig. 1. Lateral view. The central capsule is visible between the two valves of the inner shell, the galeæ of which are filled by the phæodium, ...	× 20	
	Fig. 1*a*. Dorsal view (somewhat obliquely from the left side). The galeæ appear triangular, ...	× 20	
	Fig. 1*b*. Basal view, ...	× 20	
	Fig. 1*c*. Distal end of a style, ...	× 300	
Figs. 2–2*b*.	*Cœlodecas sagittaria*, n. sp., ...		1755
	Fig. 2. One valve of the shell, seen from the outside, . .	× 30	
	Fig. 2*a*. Distal end of a style, ...	× 300	
Figs. 3–3*a*.	*Cœlostylus bisenarius*, n. sp., ...		1756
	Fig. 3. Lateral view of the bivalved shell. The central capsule is visible between the two valves of the inner shell, the galeæ of which are filled by the phæodium, . . .	× 20	
	Fig. 3*a*. Distal end of a style, ...	× 300	
Figs. 4–4*a*.	*Cœlagalma mirabile*, n. sp., ...		1759
	Fig. 4. Dorsal view of the bivalved shell, . . .	× 30	
	Fig. 4*a*. Basal view of the bivalved shell, . .	× 10	



E. Haeckel and A. Giltsch del.

A. Giltsch Jena, Lithogr.

1. COELOGRAPHIS. 2. COELODECAS. 3. COELOSTYLUS.
4. COELAGALMA.

PLATE 127.

Legion PHÆODARIA.

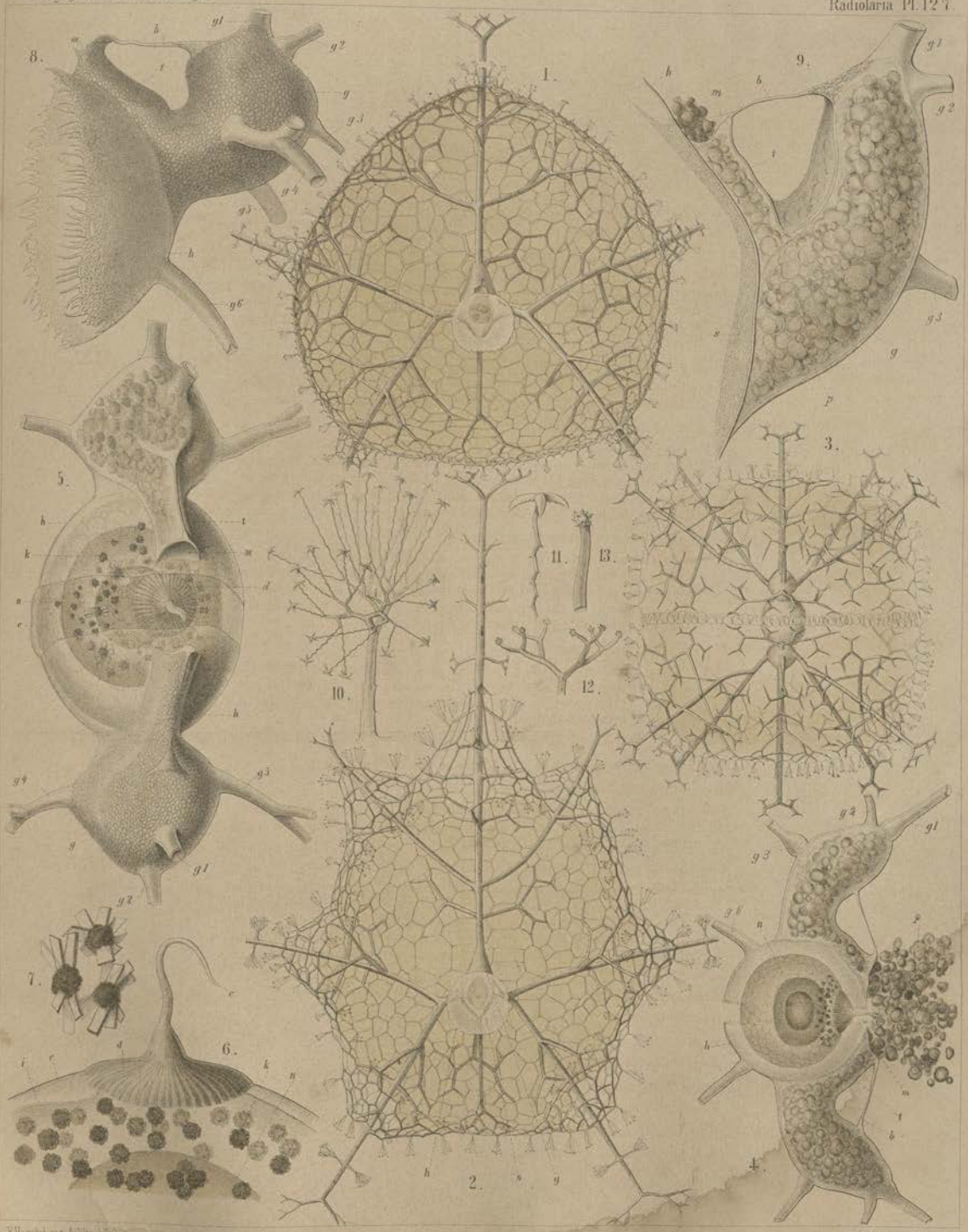
Order PHÆOCONCHIA.

Family CŒLOGRAPHIDA.

PLATE 127.

CŒLOGRAPHIDA.

		Diam.	Page
Fig. 1.	*Cœloplegma murrayanum*, n. sp., ...	× 40	1757
	One valve of the bivalved shell, seen from the inside, of the usual ovate form.		
Fig. 2.	*Cœloplegma murrayanum*, n. sp., ...	× 40	1757
	One valve of the bivalved shell, seen from the inside, of the rarer polyhedral form, which may be distinguished as a different species (*Cœloplegma tritonis*, compare p. 1758). *h*, hemispherical inner valve; *g*, galea; *s*, its base.		
Fig. 3.	*Cœloplegma murrayanum*, n. sp., ...	× 40	1757
	The entire shell, seen from the base or the aboral pole (dorsal and ventral valve connected by delicate teeth, catching into one another).		
Fig. 4.	*Cœloplegma murrayanum*, n. sp., ...	× 100	1757
	h, The two hemispherical inner valves of the shell, seen from the right side; *n*, the central nucleus inside the central capsule; *d*, the astropyle; *g*, the galea; *t*, the nasal tube, arising from its base; *m*, its mouth; *p*, the phæodium, which is partly thrown out by the nasal openings, filling up the galea and nasal tube.		
Fig. 5.	*Cœloplegma murrayanum*, n. sp., ...	× 200	1757
	h, The two hemispherical inner valves of the shell and the enclosed central capsule, seen from the oral side; *d*, the radiate operculum of the astropyle, seen in the frontal fissure between the two valves; *n*, the nucleus; *k*, the crystals; *g*, galea; g^1–g^5, the styles arising from the galea; *t*, nasal tube; *m*, mouth of it.		
Fig. 6.	*Cœloplegma murrayanum*, n. sp., ...	× 600	1757
	Oral part of a central capsule, in profile. *o*, Opening of the proboscis; *d*, radiate operculum of the astropyle, which gives rise to the proboscis; *e*, the outer, *i*, the inner membrane of the capsule; *k*, groups of crystals; *n*, nucleus.		
Fig. 7.	*Cœloplegma murrayanum*, n. sp., ...	× 1000	1757
	Three single groups of crystals, taken from the central capsule.		
Fig. 8.	*Cœloplegma murrayanum*, n. sp., ...	× 300	1757
	One inner valve of the shell, in profile. *h*, hemispherical valve; *g*, galea; g^1–g^5, the tubes arising from it; *t*, rhinocanna or nasal tube; *m*, its mouth; *b*, frenulum.		
Fig. 9.	*Cœloplegma murrayanum*, n. sp., ...	× 400	1757
	g, The galea; *t*, rhinocanna of one inner valve; *m*, its mouth; *p*, phæodella filling up both galea and rhinocanna; *b*, the sagittal frenulum connecting the galea and the mouth of the rhinocanna. g^1–g^5, the styles arising from the galea; *s*, sieve-plate, which separates the cavity of the galea from the hemispherical valve (*h*). View in profile.		
Fig. 10.	*Cœloplegma murrayanum*, n. sp., ...	× 300	1757
	An anchor-pencil of the outer shell.		
Fig. 11.	*Cœloplegma murrayanum*, n. sp., ...	× 1000	1757
	A single anchor-thread of a pencil.		
Fig. 12.	*Cœloplegma murrayanum*, n. sp., ...	× 300	1757
	Terminal branches of a style.		
Fig. 13.	*Cœloplegma murrayanum*, n. sp., ...	× 1000	1757
	A single terminal branch of a style.		



E. Haeckel and Ashtisch del.

Eichhorn, Jena, Lithogr.

(FAR-ÖER-CHANNEL) COELOPLEGMA MURRAYANUM!

PLATE 128.

Legion PHÆODARIA

Order PHÆOCONCHIA.

Family CŒLOGRAPHIDA.

PLATE 128.

CŒLOGRAPHIDA.

		Diam.	Page
Fig. 1.	*Cœlospathis ancorata*, n. sp., ...	× 50	1754

Lateral view of the entire shell. The central capsule is visible between the two valves of the inner shell. The galeæ and rhinocannæ of the two inner valves are filled up by the black phæodium.

Fig. 2.	*Cœlospathis ancorata*, n. sp., ...	× 100	1754

The two valves of the inner shell; the galeæ and rhinnocannæ of which are filled up by the black phæodium. Between the mouth of the two rhinocannæ is prominent the proboscis of the astropyle, arising from the radiate operculum of the central capsule. The latter contains numerous crystals and a big dark nucleus. Lateral view.

Fig. 3.	*Cœlospathis ancorata*, n. sp., ...	× 200	1754

The rhinocanna or the nasal tube of one valve, and the latticed frenulum which connects its mouth with the top of the galea.

Fig. 4.	*Cœlospathis ancorata*, n. sp., ...	× 80	1754

Distal end of a style.

Fig. 5.	*Cœlospathis ancorata*, n. sp., ...	× 200	1754

Terminal branches of a style.

Fig. 6.	*Cœlospathis ancorata*, n. sp., ...	× 600	1754

Lateral branch of a style, with an anchor-pencil.

Fig. 7.	*Cœlospathis ancorata*, n. sp., ...	× 300	1754

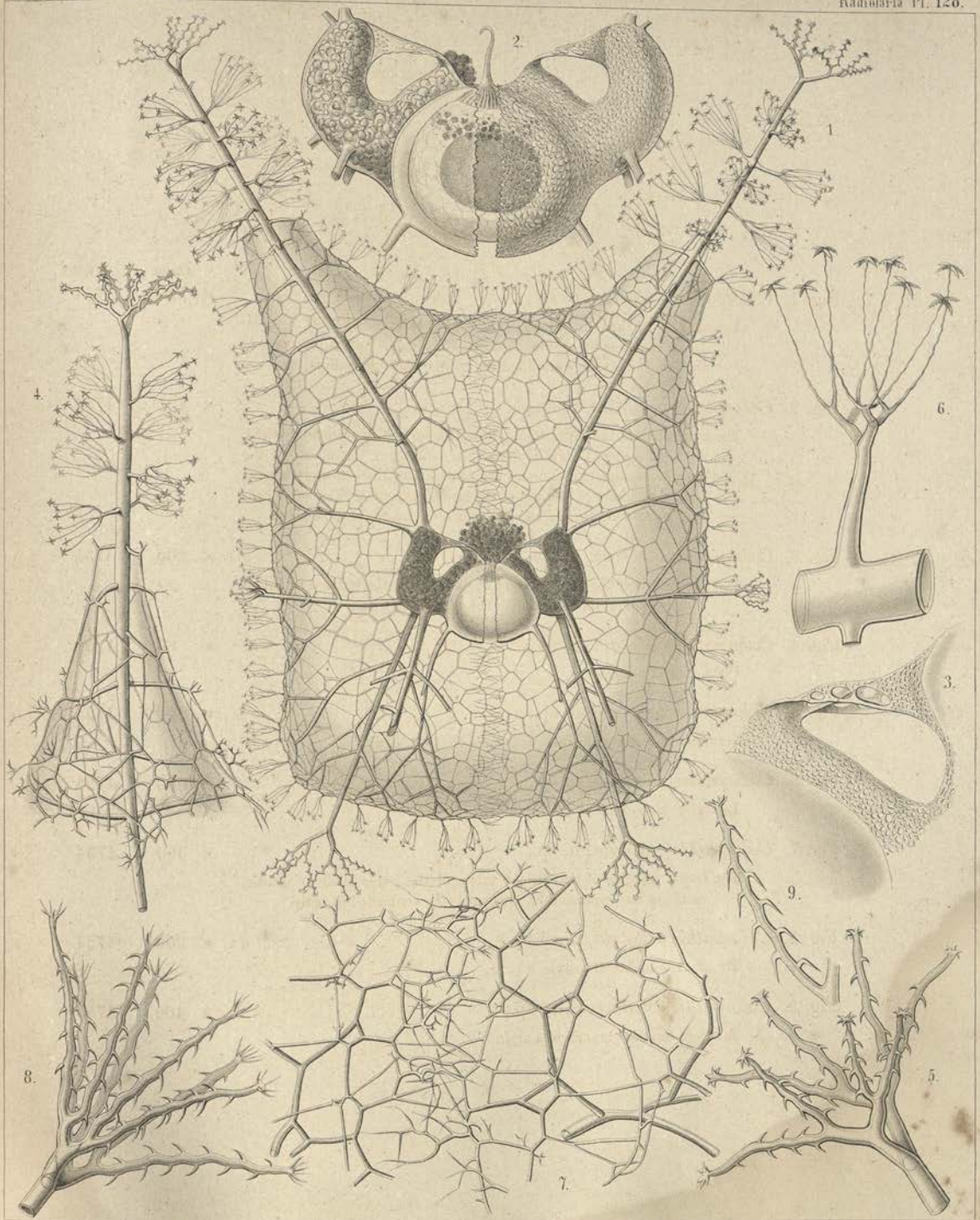
The lateral margins of the latticed valves of the outer shell or mantle, catching into one another, without being connected directly.

Fig 8.	*Cœlospathis octostyla*, n. sp., ...	× 300	1754

Terminal branches of a style.

Fig. 9.	*Cœlospathis octodactyla*, n. sp., ...	× 400	1755

A single terminal branch of a style.



E. Haeckel and A. Fritsch Del.

E. Pöltsch Jena. Lithogr.

COELOSPATHIS.

PLATE 129.

Legion ACANTHARIA.

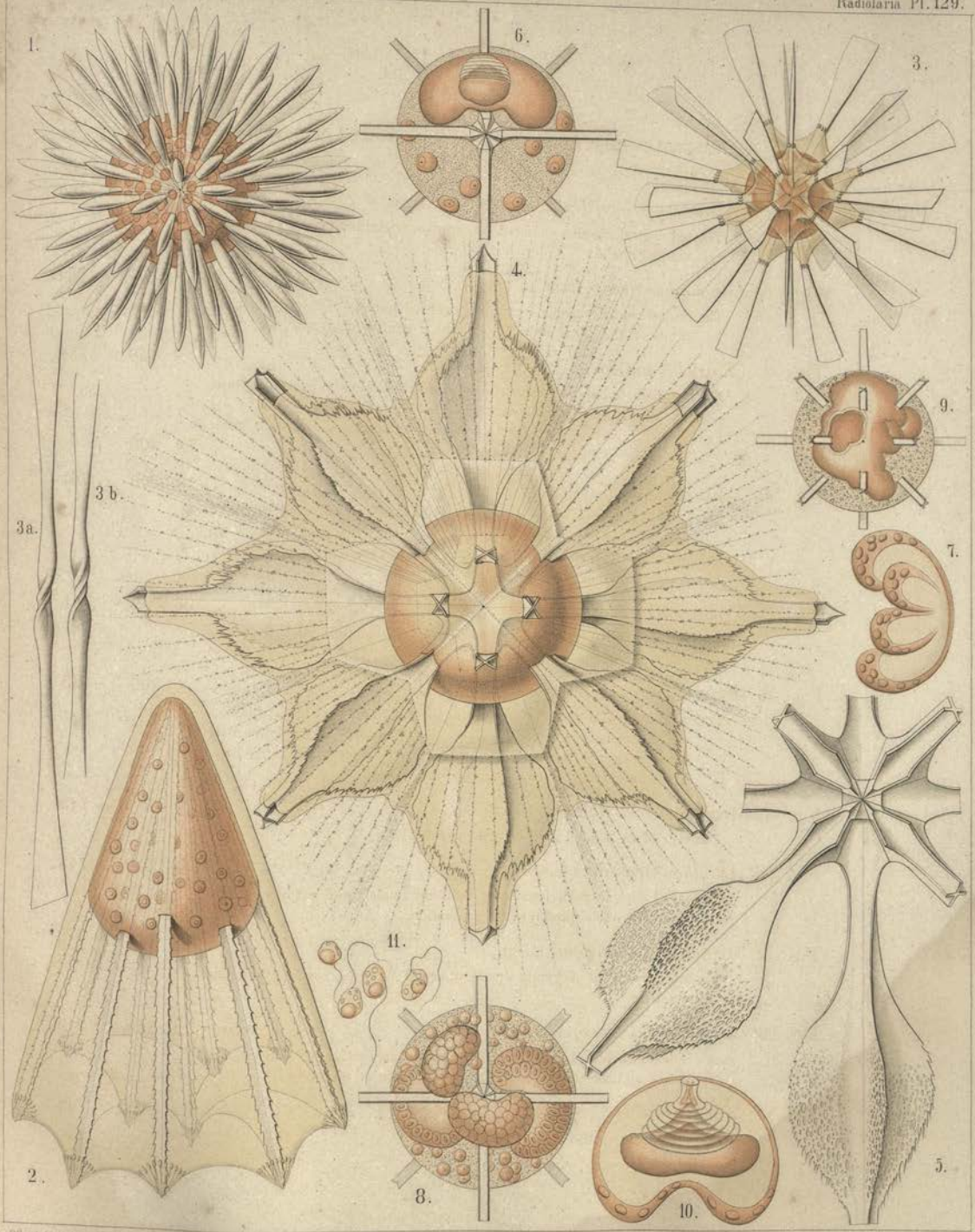
Orders ACTINELLIDA ET ACANTHONIDA.

Families ASTROLOPHIDA, LITHOLOPHIDA, CHIASTOLIDA et ASTROLONCHIDA.

PLATE 129.

ASTROLOPHIDA, LITHOLOPHIDA, CHIASTOLIDA et ASTROLONCHIDA.

		Diam.	Page
Fig. 1.	*Actinelius primordialis*, n. sp., ...	× 100	730
	The red central capsule, coloured by carmine, contains numerous intensely stained nuclei.		
Fig. 2.	*Litholophus decapristis*, n. sp., ...	× 300	735
	The conical central capsule contains numerous nuclei. The calymma exhibits on the distal end of each spine a coronet of myophriscs.		
Fig. 3.	*Chiastolus amphicopium*, n. sp., ...	× 150	738
	Sixteen diametral spines pierce the spherical, red-coloured central capsule. The conical sheets of the calymma bear myophriscs.		
	Figs. 3*a*, 3*b*. Two isolated diametral spines exhibiting the peculiar spiral revolution at their central part, ...	× 300	
Fig. 4.	*Xiphacantha ciliata*, n. sp., ...	× 300	761
	The spherical central capsule is coloured red. The yellowish calymma envelops the radial spines completely. The polygonal network of lines, in which the radiating pseudopodia are symmetrically arranged, is partly visible.		
Fig. 5.	*Xiphacantha ciliata*, n. sp., ...	× 300	761
	The central part of the skeleton, exhibiting the central junction of the radial spines.		
Fig. 6.	*Acanthometron dolichoscion*, n. sp., ...	× 300	743
	Central capsule of a young specimen; in its upper half the peculiar kidney-shaped nucleus is visible, with its invagination; in the lower half some nucleated yellow cells are visible (intracapsular xanthellæ). These and the nucleus are stained by carmine.		
Fig. 7.	*Acanthometron dolichoscion*, n. sp., ...	× 300	743
	Cleavage of an isolated nucleus, with four buds.		
Fig. 8.	*Acanthometron dolichoscion*, n. sp., ...	× 300	743
	A central capsule with four large budding nuclei; and numerous small spherical nuclei produced by gemmation.		
Fig. 9.	*Acanthonia tetracopa*, n. sp., ...	× 400	749
	Central capsule of a young specimen, with a large, irregularly lobate nucleus.		
Fig. 10.	*Acanthonia tetracopa*, n. sp., ...	× 400	749
	An isolated nucleus, exhibiting the peculiar invagination, with its circular folds, and the connection with the flatly conical nucleolus.		
Fig. 11.	*Acanthonia tetracopa*, n. sp., ...	× 800	749
	Four flagellate spores.		



1. ACTINELIUS, 2. LITHOLOPHUS, 3. CHIASTOLUS,
4-11. ACANTHONIA.

PLATE 130.

Legion ACANTHARIA.

Order ACANTHONIDA.

Family ASTROLONCHIDA.

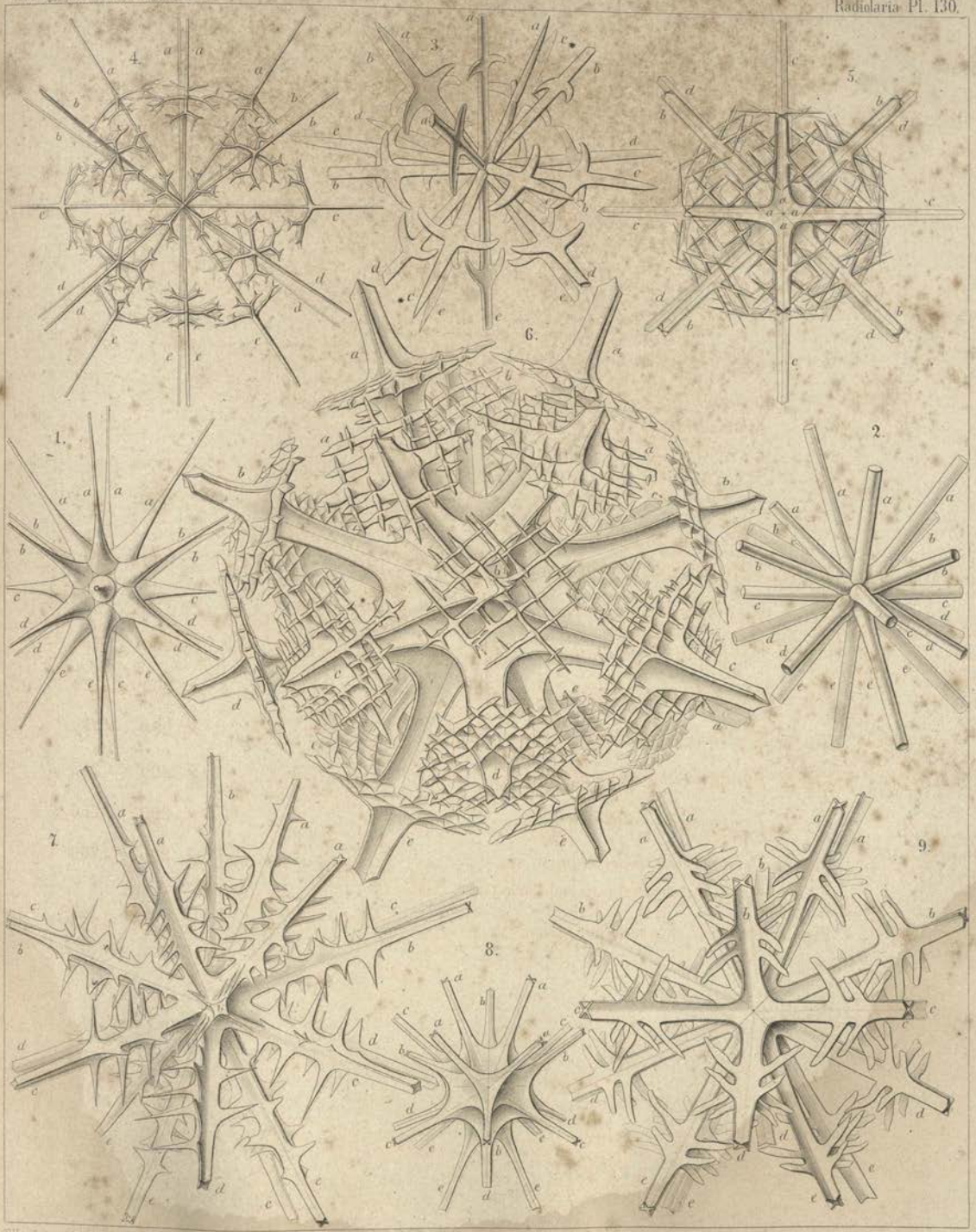
PLATE 130.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

ASTROLONCHIDA.

		Diam.	Page
Fig. 1.	*Acanthometron bulbiferum*, n. sp.,	× 300	745
Fig. 2.	*Acanthometron cylindricum*, n. sp.,	× 200	743
Fig. 3.	*Lithophyllium gladiatum*, n. sp.,	× 200	754
Fig. 4.	*Stauracantha quadrifurca*, n. sp.,	× 300	764
Fig. 5.	*Stauracantha orthostaura*, n. sp.,	× 200	762
Fig. 6.	*Phatnacantha icosaspis*, n. sp.,	× 400	765
Fig. 7.	*Pristacantha polyodon*, n. sp.,	× 300	766
Fig. 8.	*Pristacantha dodecodon*, n. sp., Only the central parts and the leaf-cross.	× 300	766
Fig. 9.	*Pristacantha octodon*, n. sp.,	× 200	765



1-2. ACANTHOMETRON. 3. LITHOPHYLLIUM. 4-6. STAURACANTHA.
7-9. PRISTACANTHA.

PLATE 131.

Legion ACANTHARIA.

Order ACANTHONIDA.

Family QUADRILONCHIDA.

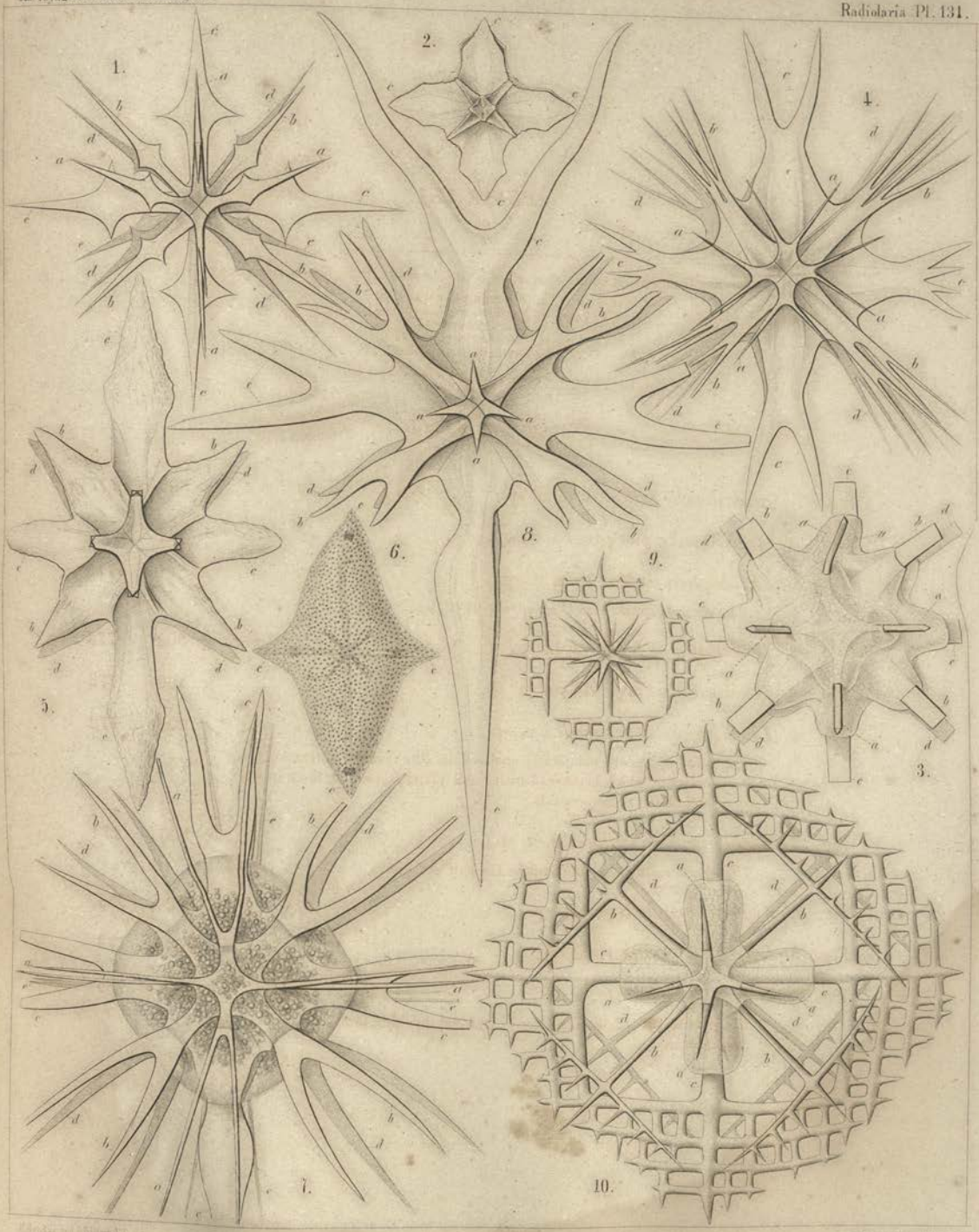
PLATE 131.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

QUADRILONCHIDA.

		Diam.	Page
Fig. 1.	*Quadrilonche mesostaura*, n. sp.,	× 300	777
Fig. 2.	*Quadrilonche platystaura*, n. sp.,	× 100	777
Fig. 3.	*Xiphoptera dodecactena*, n. sp.,	× 200	778
	The central capsule with the central part of the skeleton.		
Fig. 4.	*Lonchostaurus bifurcus*, n. sp.,	× 300	773
Fig. 5.	*Lonchostaurus crystallinus*, n. sp.,	× 400	773
Fig. 6.	*Lonchostaurus rhomboides*, n. sp.,	× 200	772
	The radial spines are completely enclosed in the rhombic calymma, the surface of which is covered with small plates, similar to those in the shell of the Sphærocapsida.		
Fig. 7.	*Zygostaurus amphithectus*, n. sp.,	× 300	774
	The square central capsule envelops the half skeleton.		
Fig. 8.	*Zygostaurus sagittalis*, n. sp.,	× 300	775
Fig. 9.	*Lithoptera tetraptera*, n. sp.,	× 300	779
Fig. 10.	*Lithoptera quadrata*, n. sp.,	× 300	780
	The central part of the skeleton is enclosed by the four-lobed central capsule.		



1-3. QUADRILONCHE. 4-6. BELONOSTAURUS. 7. 8. LONCHOSTAURUS.
9. 10. LITHOPTERA.

PLATE 132.

Legion ACANTHARIA.

Orders ACTINELLIDA ET ACANTHONIDA.

Families ASTROLOPHIDA, ASTROLONCHIDA et AMPHILONCHIDA.

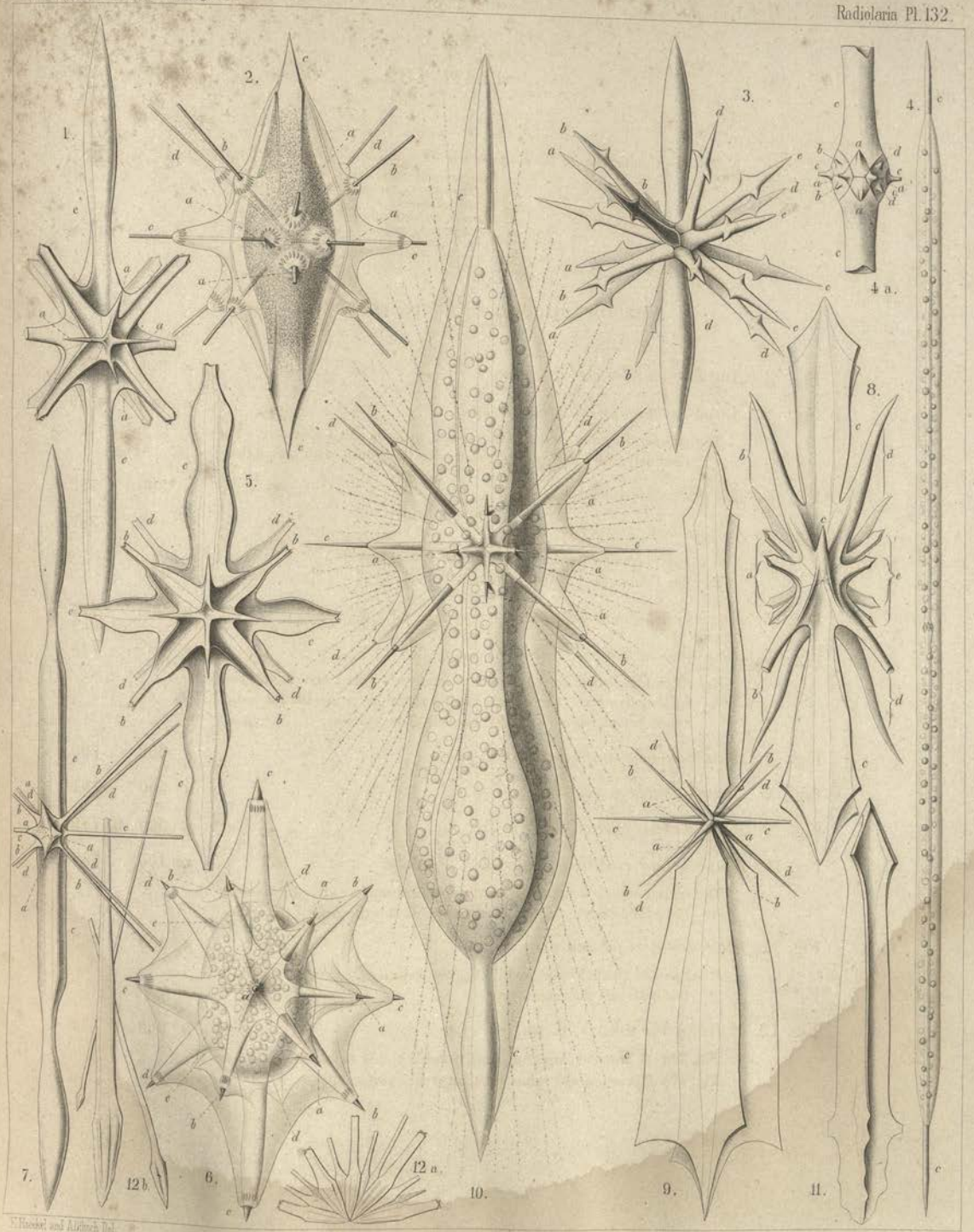
PLATE 132.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

ASTROLOPHIDA, ASTROLONCHIDA et AMPHILONCHIDA.

		Diam.	Page
Fig. 1.	*Amphilonche lanceolata*, n. sp., ...	× 300	783
Fig. 2.	*Amphilonche hydrotomica*, n. sp., ...	× 300	786
	The spindle-shaped central capsule is filled up with small granules. The clear calymma forms conical sheaths for the spines, with myophriscs.		
Fig. 3.	*Amphilonche diodon*, n. sp., ...	× 300	783
Fig. 4.	*Amphilonche concreta*, n. sp., ...	× 100	787
	A complete specimen with the cylindrical central capsule.		
	Fig. 4*a*. Central part of the skeleton, ...	× 400	
Fig. 5.	*Amphilonche violina*, n. sp., ...	× 300	787
Fig. 6.	*Amphilonche conica*, n. sp., ...	× 300	785
	The ellipsoidal central capsule contains numerous nuclei and is enclosed by the calymma. The conical sheaths of the latter include the radial spines completely and exhibit coronets of myophriscs.		
Fig. 7.	*Acantholonche amphipolaris*, n. sp., ...	× 200	790
Fig. 8.	*Acantholonche peripolaris*, n. sp., ...	× 300	791
Fig. 9.	*Amphibelone pyramidata*, n. sp., ...	× 300	789
Fig. 10.	*Amphibelone cultellata*, n. sp., ...	× 400	789
	The central capsule contains numerous spherical nuclei and is enclosed by the hyaline calymma, which forms conical sheaths around the spines.		
Fig. 11.	*Stauracantha johannis*, n. sp., ...	× 400	763
	Basal part of a radial spine, exhibiting the peculiar torsion of the basal leaf-cross and the central apex.		
Fig. 12.	*Astrolophus solaris*, n. sp., ...	× 200	732
	Fig. 12*a*. A group of larger and smaller radial spines united in the centre.		
	Fig. 12*b*. Three isolated spines (one larger and two smaller), . .	× 200	



1-6. AMPHILONCHE, 7. 8. ACANTHOLONCHE, 9 12. AMPHIBELONE.

PLATE 133.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Families SPHÆROCAPSIDA, DORATASPIDA et PHRACTOPELTIDA.

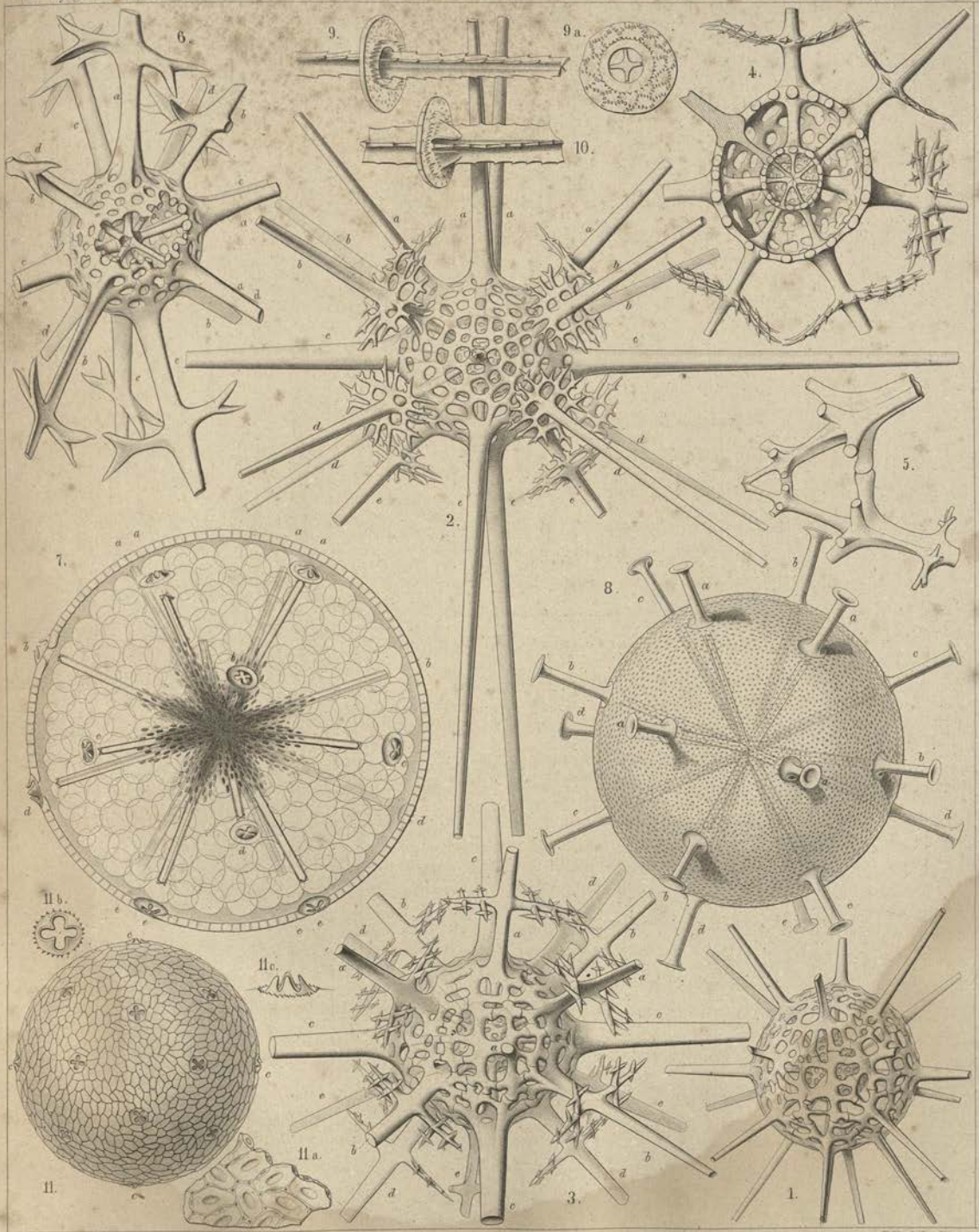
PLATE 133.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

SPHÆROCAPSIDA, DORATASPIDA et PHRACTOPELTIDA.

		Diam.	Page
Fig. 1.	*Phractopelta doratáspis*, n. sp., ...	× 300	852
Fig. 2.	*Dorypelta tessaraspis*, n. sp., ...	× 300	858
Fig. 3.	*Stauropelta cruciata*, n. sp., ...	× 400	859
Fig. 4.	*Pantopelta icosaspis*, n. sp., ...	× 400	855
	Meridional section through the double shell.		
Fig. 5.	*Octopelta scutella*, n. sp., ...	× 400	856
	Proximal part of two meeting spines, isolated.		
Fig. 6.	*Orophaspis furcata*, n. sp., ...	× 400	818
Fig. 7.	*Porocapsa murrayana*, n. sp., ...	× 300	800
	The central capsule is filled up by spherical vacuoles and enclosed by the porous shell; in the centre radii of small granules (nuclei ?) occur.		
Fig. 8.	*Cannocapsa stethoscopium*, n. sp., ...	× 300	801
	The shell alone.		
Fig. 9.	*Astrocapsa coronata*, n. sp., ...	× 400	799
	Middle part of one spine with the four aspinal holes.		
	Fig. 9*a*. Transverse section of a radial spine, with the four surrounding aspinal holes and the neighbouring part of the shell, .	× 400	
Fig. 10.	*Astrocapsa stellata*, n. sp., ...	× 400	799
	Part of one spine, with the aspinal holes and their four triangular teeth.		
Fig. 11.	*Cenocapsa nirvana*, n. sp., ...	× 200	802
	The entire shell, with its pavement of small plates and the twenty cruciform perspinal holes.		
	Fig. 11*a*. A group of small ovate plates which compose the shell; in each plate a dimple with a porule, ...	× 400	
	Fig. 11*b*. A cruciform perspinal hole, seen from the face, . .	× 400	
	Fig. 11*c*. A cruciform perspinal hole, with its four teeth, seen in profile, .	× 400	



E. Haeckel ad. Nat. del. Edinburgh Sea Lithogr.

1–5. PHRACTOPELTA, 6. OROPHASPIS, 7. POROCAPSA, 8. CANNOCAPSA,
9. 10. ASTROCAPSA, 11. CENOCAPSA.

PLATE 134.

Legion ACANTHARIA

Order SPHÆROPHRACTA.

Family DORATASPIDA.

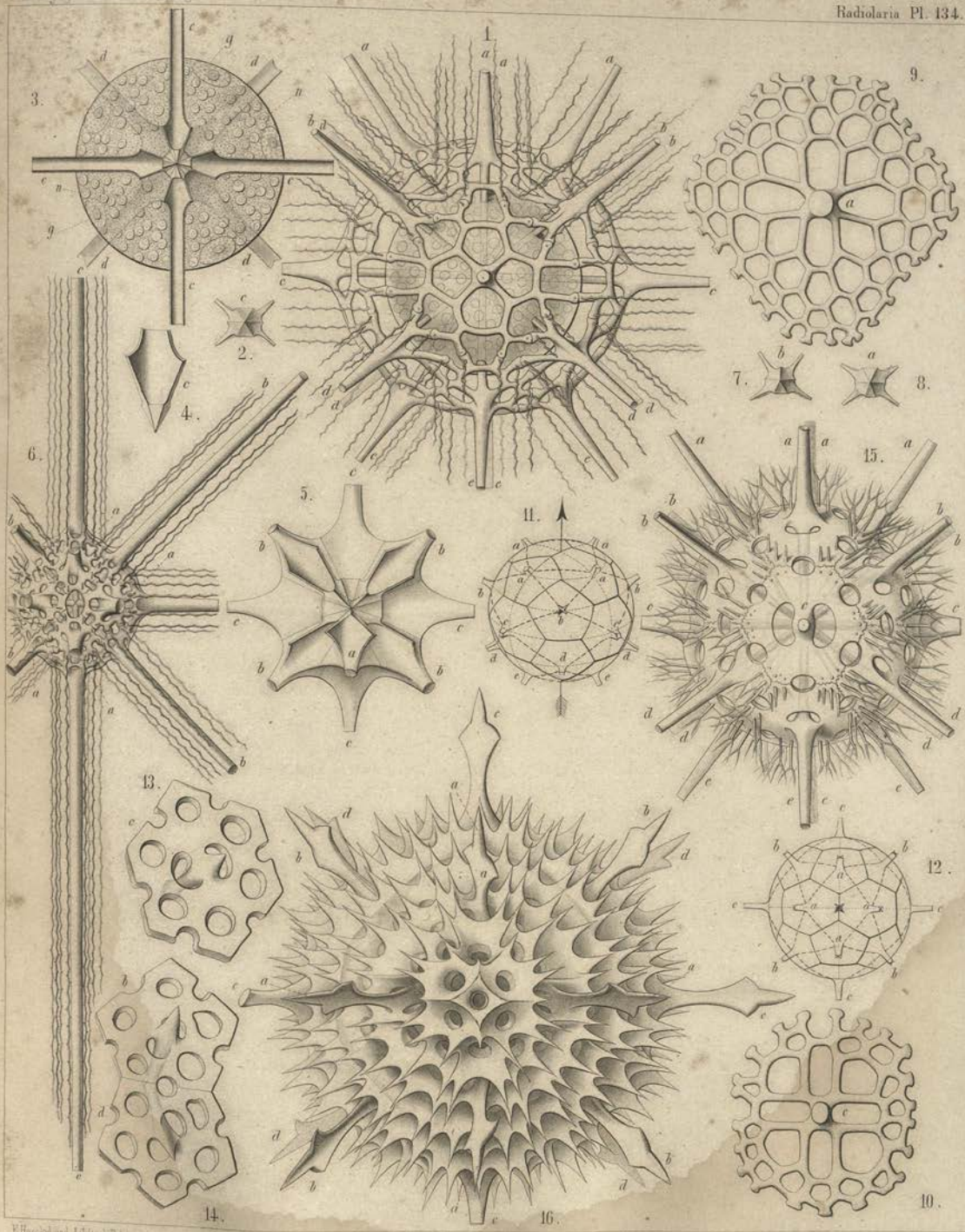
PLATE 134.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

DORATASPIDA.

		Diam.	Page
Fig. 1.	*Dodecaspis tricincta*, n. sp., ... The enclosed central capsule contains numerous spherical nuclei.	× 400	834
Fig. 2.	*Lychnaspis minima*, n. sp., ... Six-sided basal pyramid of an equatorial spine, with the leaf-cross, seen from the centre.	× 400	841
Fig. 3.	*Zonaspis cingulata*, n. sp., ... Equatorial section through the central capsule. *n*, nuclei; *g*, yellow bodies (intracapsular xanthellæ).	× 400	834
Fig. 4.	*Zonaspis cingulata*, n. sp., ... Central pyramidal base of an equatorial spine, with the leaf-cross.	× 800	834
Fig. 5.	*Stauraspis cruciata*, n. sp., ... Central union of the radial spines, three polar spines being taken off.	× 400	831
Fig. 6.	*Lychnaspis longissima*, n. sp., ...	× 400	841
Fig. 7.	*Lychnaspis minima*, n. sp., ... Five-sided basal pyramid of a tropical spine, with the leaf-cross, seen from the centre.	× 400	841
Fig. 8.	*Lychnaspis minima*, n. sp., ... Six-sided basal pyramid of a polar spine, with the leaf-cross, seen from the centre.	× 400	841
Fig. 9.	*Icosaspis elegans*, n. sp., ... An isolated polar plate.	× 400	844
Fig. 10	*Icosaspis cruciata*, n. sp., ... An isolated equatorial plate.	× 400	844
Figs. 11, 12.	*Dorataspis* species, ... Diagram of the composition of the shell of twenty plates (and also of the central union of the basal leaf-cross). Fig. 11. Oblique equatorial aspect. Fig. 12. Accurate polar aspect (compare p. 804, 805).	× 100	
Fig. 13.	*Coscinaspis isopora*, n. sp., ... An isolated equatorial plate (with two aspinal and six coronal pores).	× 400	828
Fig. 14.	*Coscinaspis isopora*, n. sp., ... Two isolated tropical plates (*b*, northern; *d*, southern), each with two aspinal and five coronal pores).	× 400	828
Fig. 15.	*Diporaspis nephropora*, n. sp., ...	× 400	816
Fig. 16.	*Acontaspis hastata*, n. sp., ...	× 400	829



E. Haeckel and Athitsch del.

E. Gebhardt, Jena, Lithogr.

1–5. DODECASPIS, 6–8. LYCHNASPIS, 9, 10. ICOSASPIS, 11–14. COSCINASPIS, 15. DIPORASPIS, 16. ACONTASPIS.

PLATE 135.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Families SPHÆROCAPSIDA et DORATASPIDA.

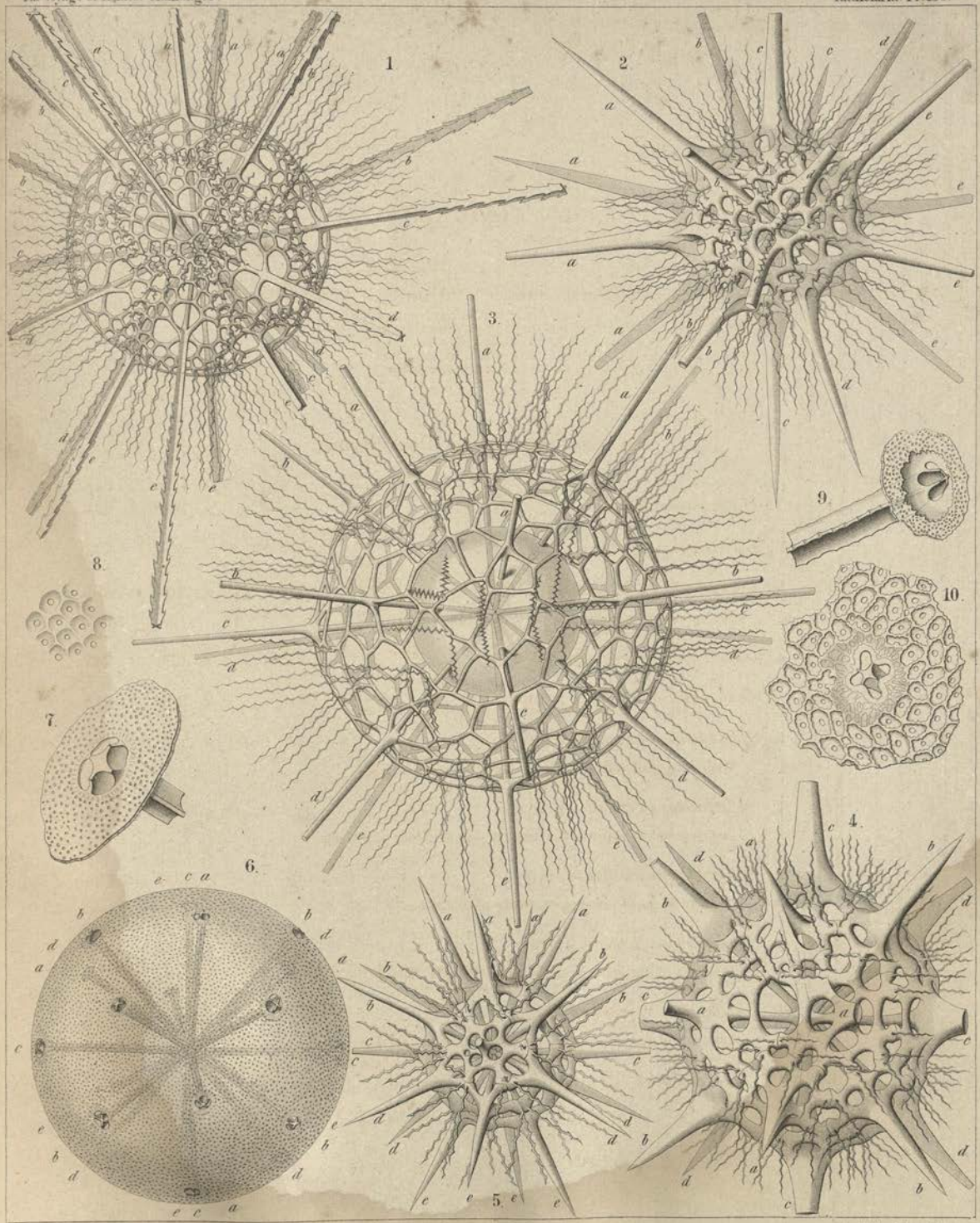
PLATE 135.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

SPHÆROCAPSIDA et DORATASPIDA.

		Diam.	Page
Fig. 1.	*Hylaspis serrulata*, n. sp.,	× 300	846
Fig. 2.	*Lychnaspis undulata*, n. sp.,	× 400	841
Fig. 3.	*Lychnaspis giltschii*, n. sp.,	× 400	839
	The spherical central capsule is enclosed in the shell.		
Fig. 4.	*Lychnaspis rottenburgii*, n. sp.,	× 400	841
Fig. 5.	*Zonaspis æquatorialis*, n. sp.,	× 300	834
Fig. 6.	*Sphærocapsa cruciata*, n. sp.,	× 150	798
	The entire shell, with its twenty cruciate perspinal holes.		
Fig. 7.	*Sphærocapsa cruciata*, n. sp.,	× 800	798
	Insertion of one spine in the cruciate perspinal hole of the shell.		
Fig. 8.	*Sphærocapsa quadrata*, n. sp.,	× 800	798
	A group of pores and dimples in the shell surface.		
Fig. 9.	*Sphærocapsa dentata*, n. sp.,	× 800	798
	Insertion of one spine in the cruciate perspinal hole of the shell.		
Fig. 10.	*Sphærocapsa pavimentata*, n. sp.,	× 800	798
	Insertion of one spine in the perspinal hole of the shell, which is composed of four cruciate aspinal holes and surrounded by a group of dimples and pores.		



E. Haeckel and E. Giltsch, Del. E. Giltsch, Jena, Lithogr.

1–5. LYCHNASPIS, 6–10. SPHAEROCAPSA.

PLATE 136.

Legion ACANTHARIA.

Orders SPHÆROPHRACTA ET PRUNOPHRACTA.

Families DORATASPIDA et BELONASPIDA.

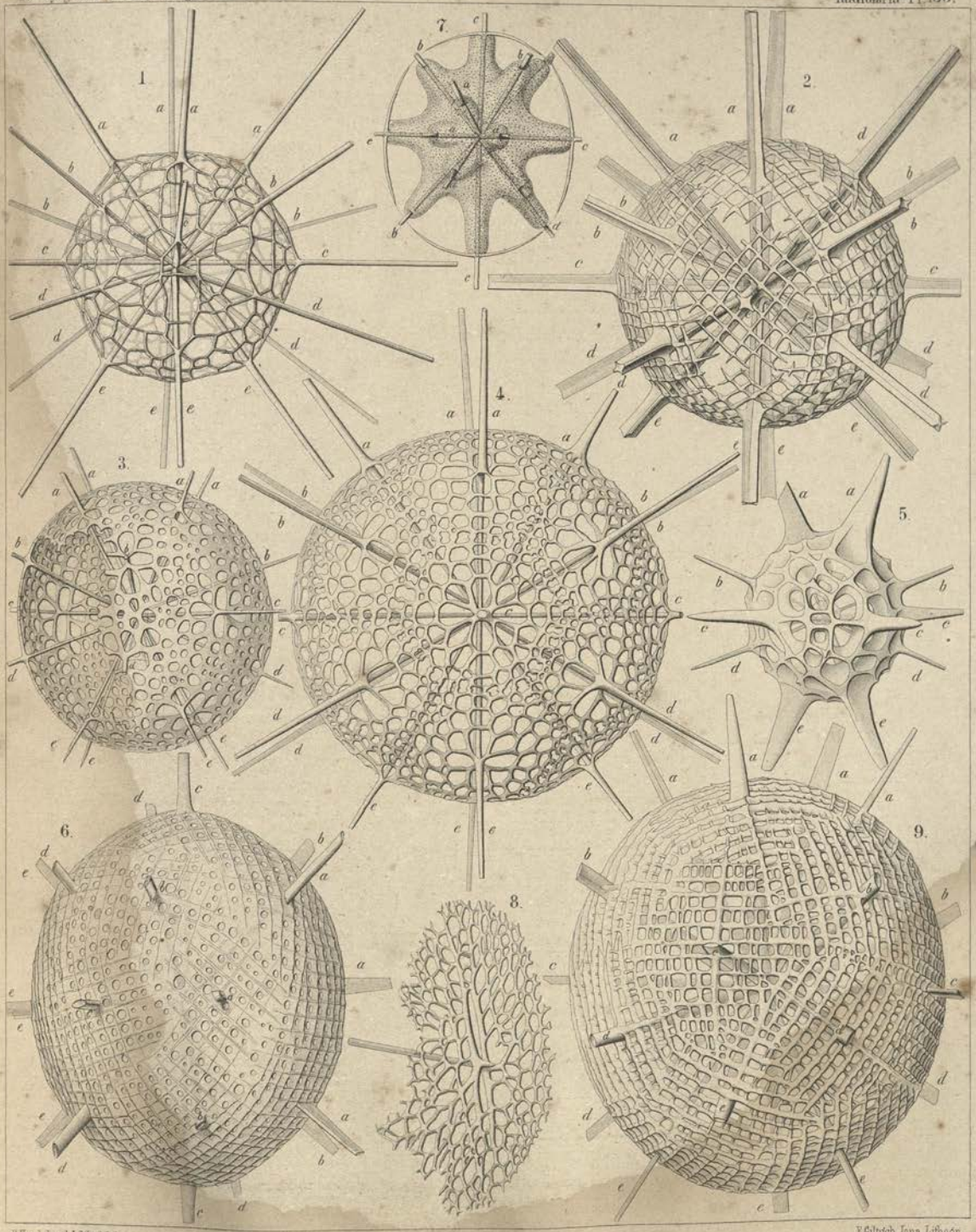
PLATE 136.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

Dorataspida et Belonaspida.

			Diam.	Page
Fig. 1.	*Tessaraspis arachnoides*, n. sp.,	×	300	836
Fig. 2.	*Icosaspis tabulata*, n. sp.,	×	200.	843
Fig. 3.	*Icosaspis icosastaura*, n. sp.,	×	400	846
Fig. 4.	*Icosaspis elegans*, n. sp.,	×	300	844
Fig. 5.	*Tessaraspis concreta*, n. sp.,	×	400	838
Fig. 6.	*Phatnaspis cristata*, n. sp.,	×	400	869
Fig. 7.	*Phatnaspis haliommidium*, n. sp., Central capsule within the shell—outline.	×	200	871
Fig. 8.	*Coscinaspis polypora*, n. sp., A single lattice-plate of the shell.	×	300	827
Fig. 9.	*Phatnaspis lacunaria*, n. sp.,	×	400	869



E. Haeckel and J. G. Fitsch, Del. E. Giltsch, Jena, Lithogr.

1-5. TESSARASPIS, 6-9. PHATNASPIS.

PLATE 137.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Family DORATASPIDA.

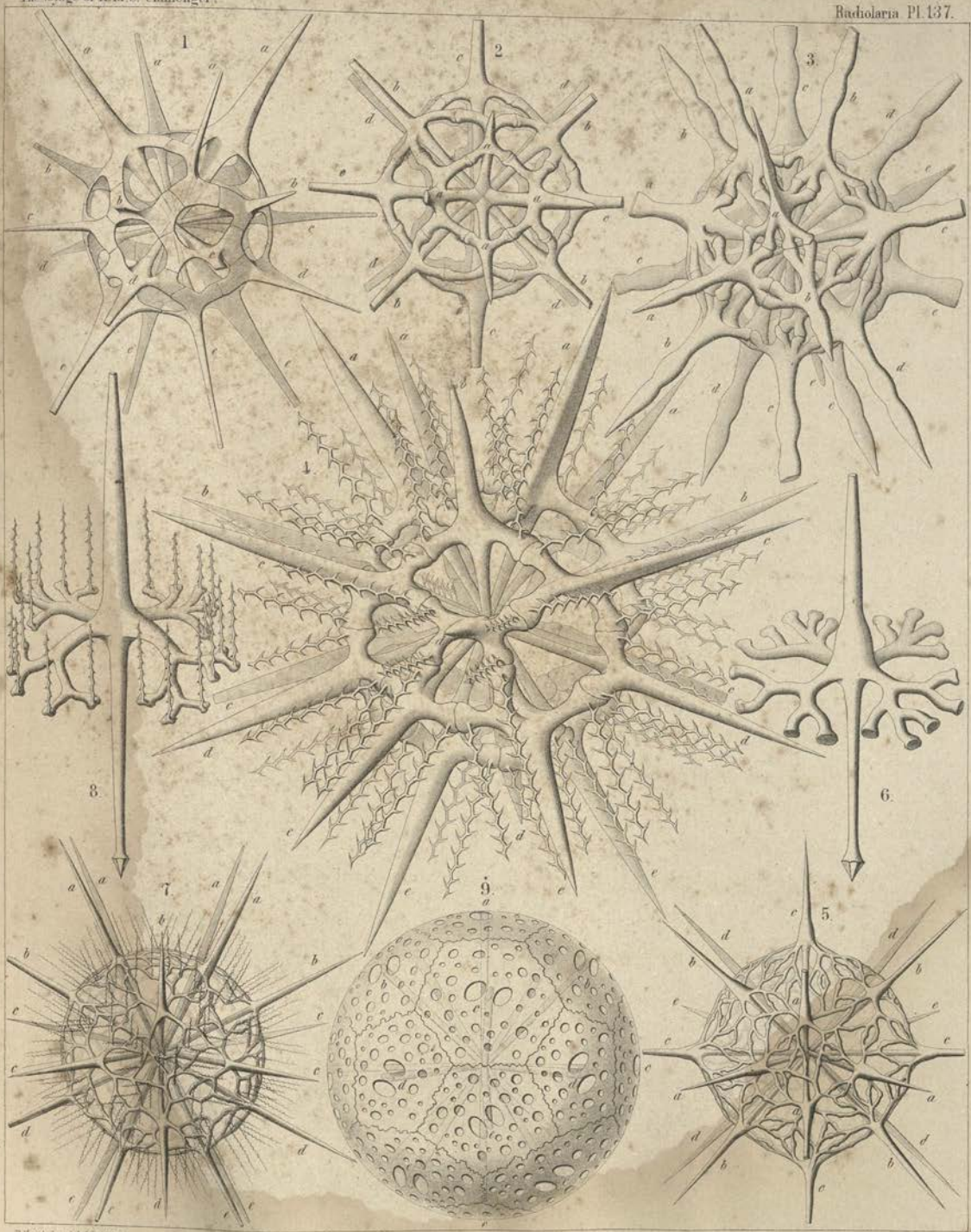
PLATE 137.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines
c. Equatorial spines.
d. Southern tropical spines
e. Southern polar spines.

DORATASPIDA.

		Diam.	Page
Fig. 1.	*Phractaspis complanata*, n. sp.,	× 400	809
Fig. 2.	*Phractaspis prototypus*, n. sp.,	× 400	809
Fig. 3.	*Phractaspis constricta*, n. sp.,	× 400	810
Fig. 4.	*Pleuraspis horrida*, n. sp.,	× 400	811
Fig. 5,	*Stauraspis stauracantha*, n. sp.,	× 300	832
Fig. 6.	*Stauraspis stauracantha*, n. sp., A single spine.	× 600	832
Fig. 7.	*Echinaspis echinoides*, n. sp.,	× 300	833
Fig. 8.	*Echinaspis echinoides*, n. sp., A single spine.	× 800	833
Fig. 9.	*Coscinaspis parmipora*, n. sp.,	× 400	827



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K. Giltsch, Jena, Lithogr.

1-3. PHRACTASPIS, 4. PLEURASPIS, 5.6. STAURASPIS.
7.8. ECHINASPIS, 9. DORATASPIS.

PLATE 138.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Family DORATASPIDA.

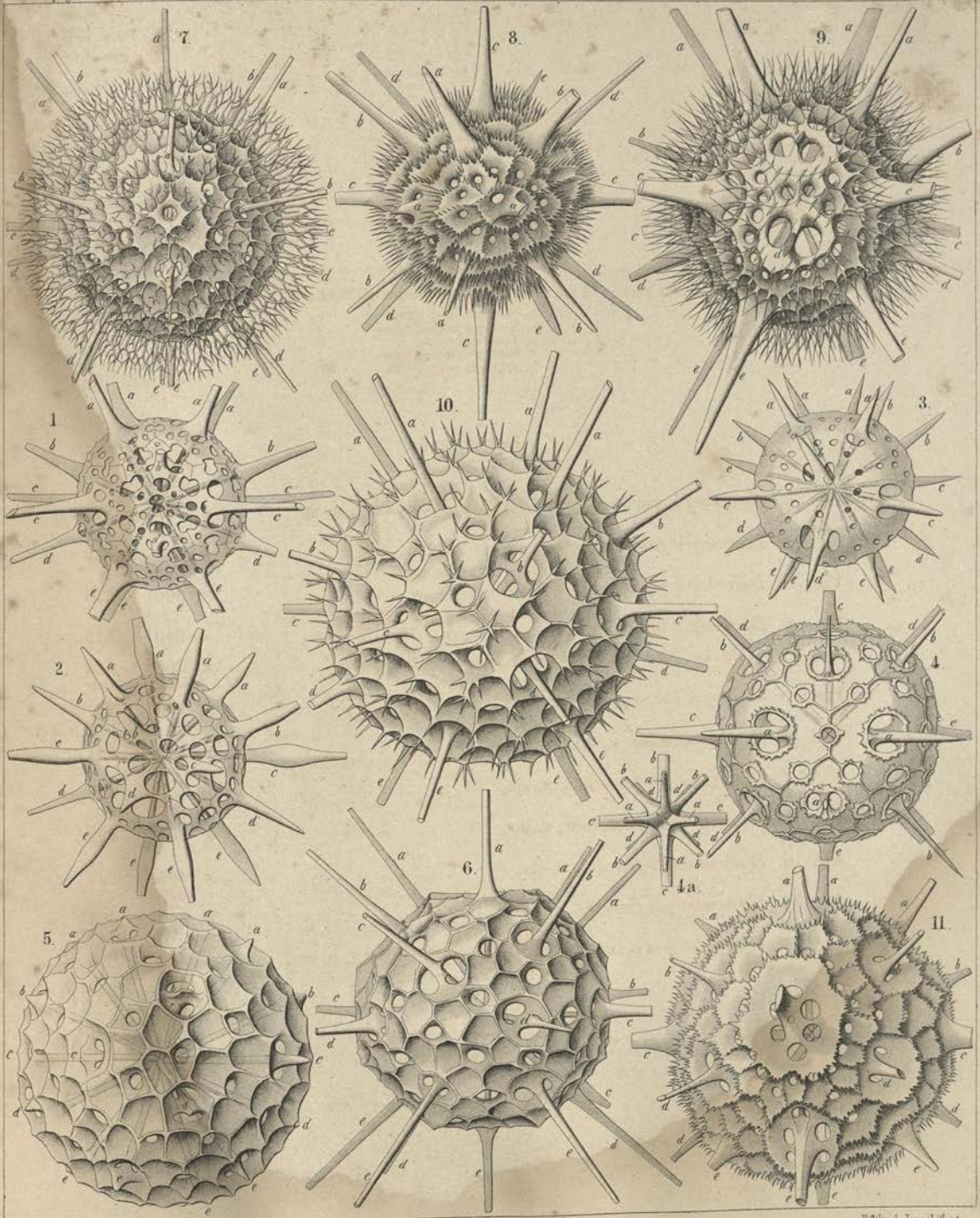
PLATE 138.

N.B.—The signification of the characters is the same in all the figures (compare p. 718),

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

DORATASPIDA.

		Diam.	Page
Fig. 1.	*Coscinaspis peripora* (vel *Drataspis peripora*), n. sp., .	× 300	826
Fig. 2.	*Drataspis fusigera*, n. sp., ...	× 400	813
Fig. 3.	*Drataspis micropora*, n. sp., ...	× 300	815
Fig. 4.	*Drataspis typica*, n. sp., ...	× 300	815
	Fig. 4*a*. Polar view of the central union of the twenty spines, .	× 300	815
Fig. 5.	*Ceriaspis inermis*, n. sp., ...	× 400	821
Fig. 6.	*Ceriaspis favosa*, n. sp., ...	× 400	821
Fig. 7.	*Hystrichaspis fruticata*, n. sp., ...	× 300	825
Fig. 8.	*Hystrichapsis pectinata*, n. sp., ...	× 300	822
Fig. 9.	*Hystrichaspis furcata*, n. sp., ...	× 400	822
Fig. 10.	*Hystrichaspis dorsata*, n. sp., ...	× 300	823
Fig. 11.	*Hystrichaspis cristata* (vel *Siphonaspis cristata*, n. sp.), .	× 400	823



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1–4. DORATASPIS, 5.6. CERIASPIS, 7–11. HYSTRICHASPIS.

PLATE 139.

Legion ACANTHARIA.

Order PRUNOPHRACTA.

Families BELONASPIDA et HEXALASPIDA.

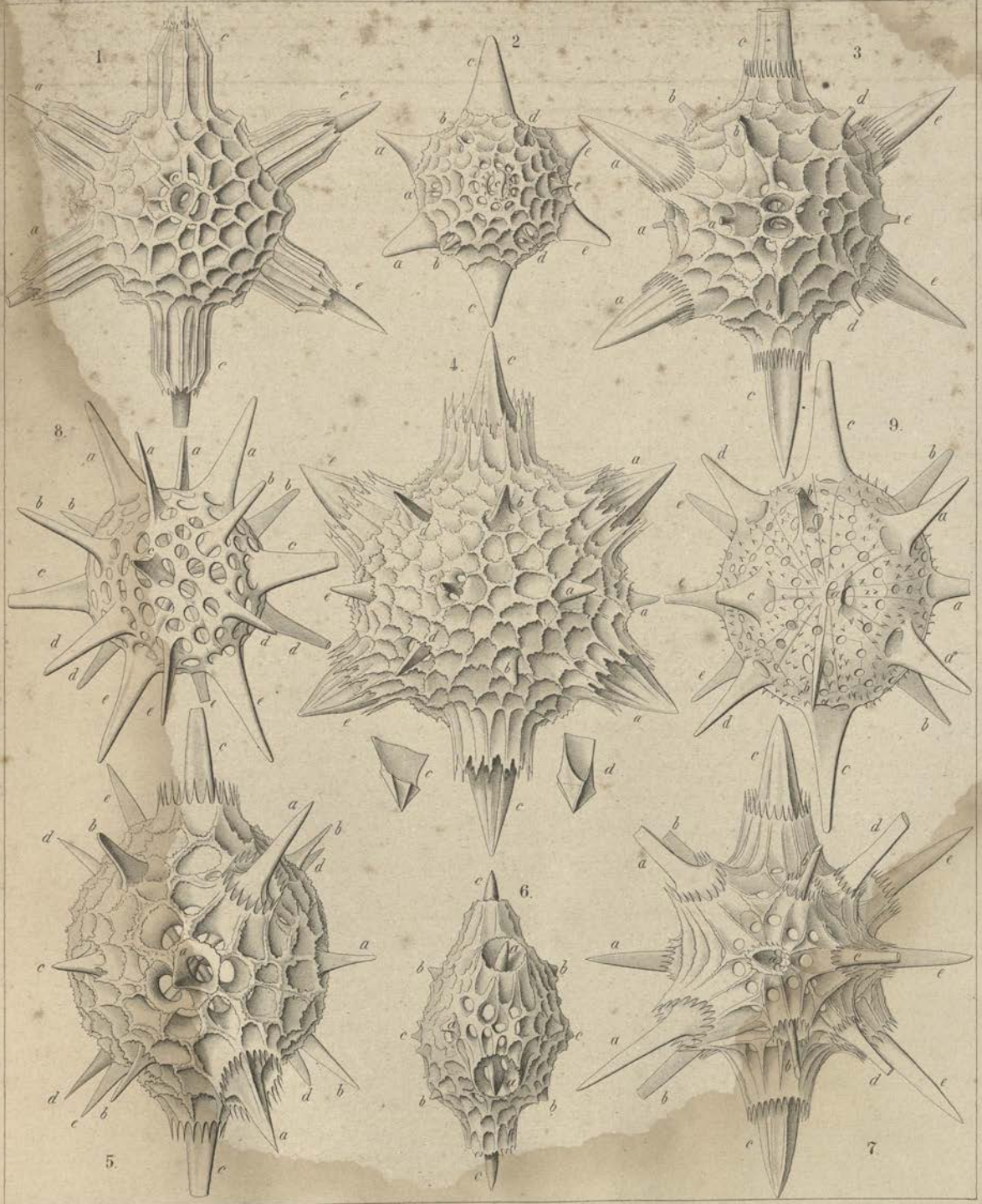
PLATE 139.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

BELONASPIDA et HEXALASPIDA.

		Diam.	Page
Fig. 1.	*Hexacolpus nivalis*, n. sp.,	× 300	880
Fig. 2.	*Hexalaspis heliodiscus*, n. sp.,	× 300	875
Fig. 3.	*Hexaconus ciliatus*, n. sp.,	× 300	876
Fig. 4.	*Hexaconus serratus*, n. sp.,	× 300	877
	c, Central base of an equatorial spine; *d*, central base of a tropical spine.		
Fig. 5.	*Hexaconus coronatus*, n. sp.,	× 300	877
Fig. 6.	*Hexaconus velatus*, n. sp.,	× 300	877
	Marginal view of the shell.		
Fig. 7.	*Hexaconus vaginatus*, n. sp.,	× 300	877
Fig. 8.	*Thoracaspis bipennis*, n. sp.,	× 300	862
Fig. 9.	*Belonaspis datura*, n. sp.,	× 400	863



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1–7. HEXALASPIS, 8. THORACASPIS, 9. BELONASPIS.

PLATE 140.

Legion ACANTHARIA.

Order PRUNOPHRACTA.

Families BELONASPIDA, HEXALASPIDA et DIPLOCONIDA.

PLATE 140.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

a. Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

BELONASPIDA, HEXALASPIDA et DIPLOCONIDA.

		Diam.	Page
Fig. 1.	*Diploconus amalla*, n. sp.,	× 300	885
Fig. 2.	*Diploconus hexaphyllus*, n. sp.,	× 300	886
Fig. 3.	*Diploconus cyathiscus*, n. sp.,	× 300	885
Fig. 4.	*Diploconus cotyliscus*, n. sp., Polar view.	× 400	886
Fig. 5.	*Diplocolpus serratus*, n. sp.,	× 300	888
Fig. 6.	*Diplocolpus cristatus*, n. sp.,	× 400	887
Fig. 7.	*Diplocolpus costatus*, n. sp.,	× 400	887
Fig. 8.	*Diplocolpus sulcatus*, n. sp.,	× 300	888
Fig. 9.	*Diplocolpus dentatus*, n. sp., Meridional section through the centre of the shell.	× 300	888
Fig. 10.	*Hexacolpus infundibulum*, n. sp.,	× 300	881
Fig. 11.	*Hexacolpus trypanon*, n. sp.,	× 300	881
Fig. 12.	*Hexaconus echinatus*, n. sp.,	× 300	878
Fig. 13.	*Coleaspis vaginata*, n. sp., Meridional section through the shell.	× 300	866
Fig. 14.	*Coleaspis hydrotomica*, n. sp.,	× 400	867
Fig. 15.	*Hexonaspis hexapleura*, n. sp., A single spine with its thick apophyses.	× 400	879
Fig. 16.	*Hexonaspis hastata*, n. sp.,	× 400	879

E.Haeckel and A.Giltsch Del. E.Giltsch Jena Lithogr.

1-3. DIPLOCONUS. 4-8. DIPLOCOLPUS. 9-12. HEXACONUS.
13.14. COLEASPIS. 15.16. HEXONASPIS.

TRACK OF
H.M.S. CHALLENGER
Decr 1872. to May 1876.
Indicates the localities where Radiolaria were fou
the richest localities where Radiolaria we
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